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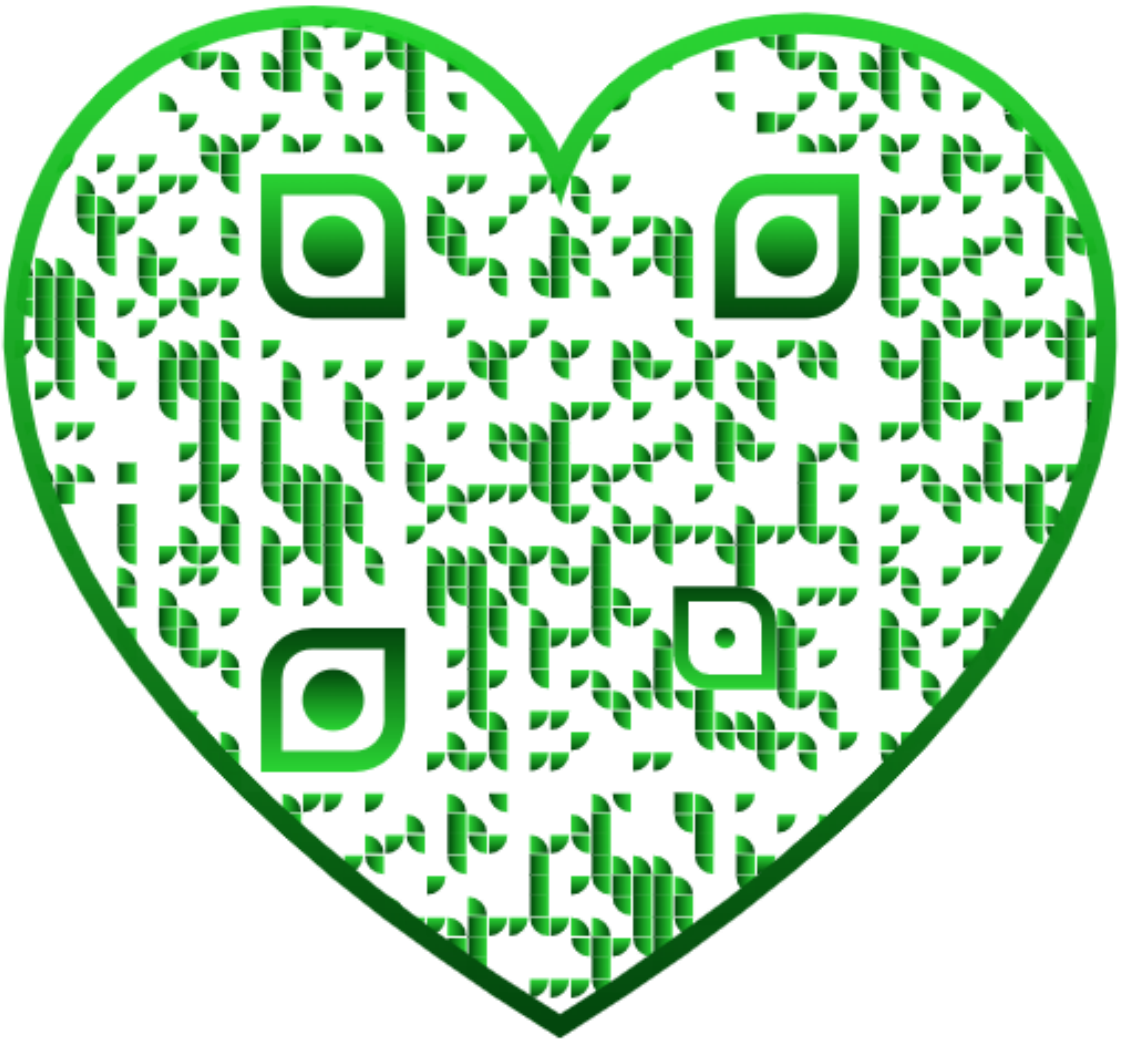
HEAR MARIAN PETRESCU
EXPENSIVE LOOKS

PLAY CHORDS LIKE AN ORCHESTRA
HOW TO ACCOMPANY SINGERS

REVIEW REASON 6
KORG MONOTRONS

KNOW USE PITCH-BEND AS VIBRATO
MAKE BIG FAT LEADS

NewBay Media
04.2012
A MUSIC PLAYER PUBLICATION



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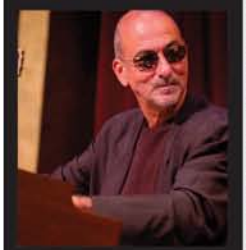

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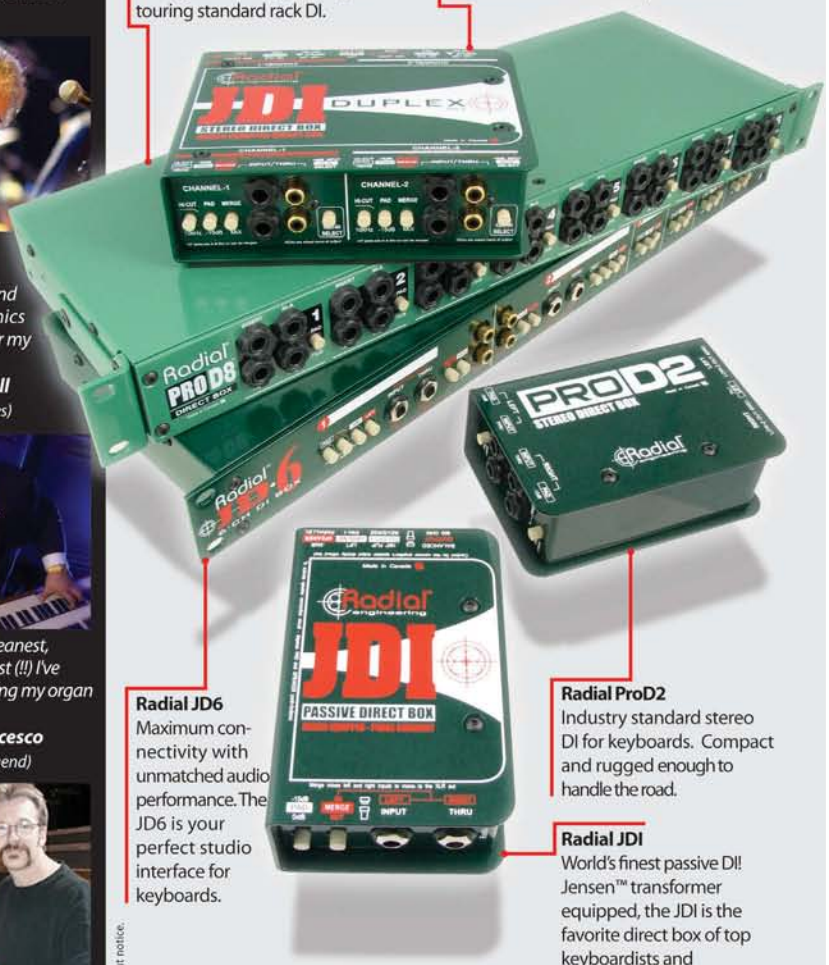

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Editor's Note

At the NAMM Show this year, I had the privilege of sitting on NAMM's official "Best in Show" panel. At 8:30 on a Sunday morning. After an event Native Instruments held at their shiny new Hollywood offices. With traffic, that can be an hour ride from the Anaheim Convention Center, so I'd resolved not to go to the after-party . . . then went to the after-party. I got to the panel with time to spare after just four hours sleep, which may get a little sympathy from musicians—as long as they aren't also new parents.

Even on no sleep, I wouldn't have missed this panel. Other than moderator Frank Alkyer (who publishes *Music Inc.* and *Downbeat*), I was the only magazine guy in a roomful of retailers. It made me realize how much I look at the NAMM Show and at gear in general through the eyes of an *enthusiast*—a gear geek who follows technology like a sports superfan follows player stats. The dealers I met, on the other hand, come to the show in search of products that solve problems—preferably affordably—for musicians of all ages and levels of ability. If you're going to talk specs and features, you need to boil them down to why non-geeks will pay real money for widget X in the real world. Case in point: When the owner of Beacock Music in Vancouver, WA, pulled out a plastic-but-not-toy trombone called the Pbone and explained that it's a gateway band instrument schools can buy in quantity and that parents won't worry about their kids trashing, there wasn't a tech-snob eyeroll in the room—only nods of appreciation.

We keyboard players love the starship bridges that are our rigs, and I have no plans to sell my synths and take up ukulele. But I've already benefitted from the perspective I gained at the Best in Show panel, and I mean for *Keyboard* to as well. To get started on that right away, turn to page 40 for our full report on the best new gear of the year. Catch the full video of the panel at keyboardmag.com/namm2012.

Stephen Fortner
Editor

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NAMM Best In Show Panelists 2012, left to right: Moderator Frank Alkyer, Stephen Fortner, Victor Salazar of Vic's Drum Shop, Gayle Beacock of Beacock Music, Tim Pratt of Dietze Music, Full Compass owner Jonathan Lipp, and Chris Basile, owner of South Jersey Music and president of the Independent Music Store Owners.

Ask Us

Some years back, there was an accompaniment device (analog) for the solo musician, called Auto Orchestra by MTI. It provided two preset bars of drums, bass, chord piano, and strings, with many selectable beats, allowing a solo musician to sound like a band. It had a pretty authentic live band sound, too. Do you know if there's a modern equivalent—or software?

Jay Singer, Australia
via email

Yes and yes. On the hardware side, **arranger keyboards** such as the Yamaha PSR series, Yamaha Tyros 4, and Korg Pa series offer rich auto-accompaniment in worldwide musical genres. They follow your chord changes; have buttons for different song sections like intros, fills, and endings; and on many models you can customize and expand the styles. The leading software (by miles) is PG Music's **Band-in-a-Box**, available for both Mac OS and Windows. Stephen Fortner

HAPPY 10th BIRTHDAY MICROKORG!

The MicroKorg isn't just a versatile and stuipdly affordable (around $400 street) virtual analog synth and vocoder—it's become a mark of hipster cred. You're just not a serious synth-pop purveyor or indie rocker unless you've raked the top tiers of your keyboard stand at acute angles to hold the miniscule but mighty synth. Some are even moved to anthropomorphism: "For all the times I've spilled wine on you, for the times I've played you with my feet, for that one time I dropped you in the dirt, and other things, I just want to wish you a happy birthday," said Justin Meldal-Johnsen of Nine Inch Nails. Cobra Starship added that "if the MicroKorg were a person, it'd be someone small with a lot of style, like Danny DeVito." To celebrate, we've re-upped our original review along with praise from top musicians at keyboardmag.com/microkorg. Check korg.com all year long for MicroKorg specials and contests.

Key Secrets

Ambient Sound as Synth Pad

Portable recorders aren't just for capturing concerts; a subtle layer of real-world ambience can add an extra dimension to your music. I often use the stereo whoosh of passing cars to add motion to music, and crowd murmurs to fill in the cracks and add an organic feel. That's similar to the function of a synth pad, and not surprisingly, pads benefit from this treatment as well. In this photo, I ran a soft synth through an old boom box with the hyper-stereo effect on. Then I recorded it with a Zoom H2n in surround (five-mic) mode. The result: a truly ambient pad. Give it a listen at keyboardmag.com/april2012. David Battino

VINTAGE RICHES

Restorer and customizer **Ken Rich** of Los Angeles is to vintage keyboards as Carroll Shelby is to Ford or AMG is to Mercedes. So many of you wrote in asking about the amazing looking instruments shown in recent ads for his shop that we decided to spread the picture across two pages and give you a few details. Contemplate your own one-of-a-kind creation at kenrichsounds.com.

1 Countless artists who were in a pinch for great organ sound have used this 1963 Hammond B-3.

2 Vox (Jennings) Continental combo organ owned by Benmont Tench of the Heartbreakers.

3 Leslie 147 with a custom rubbed ebony finish.

4 Farfisa Compact combo organ. Farfisa started making these after the Vox Continental got popular. This is one of Ken Rich's first purchases.

DARK ENERGY MEDIA

5 Fully restored Minimoog Model D.

6 Hohner Clavinet D6. Ken is making whammy bar systems for these now. Fun fact: Stevie Wonder's "Superstition" features a model C, not a D6.

7 Kustom combo organ in "cascade" sparkle blue. This one belongs to Kevin Augunas, who's worked with breakout bands such as Lost Prophets and Panic! at the Disco.

8 Green-top Wurlitzer 200 electric piano.

9 Red-top Wurlitzer 200, with Warneck Research variable vibrato installed. Red is the rarest color for 200s, and this one is original, not painted.

10 Custom Wurlitzer 106P, as in pupil—these student models had just 44 keys. Proudly owned by P.J. Morton of Maroon 5, this one has variable vibrato and optical MIDI.

11 There's nothing in the world like this Rhodes 88 Suitcase. It's handmade of mahogany and has 24-karat gold hardware.

12 The mother of all Wurlies, the 140B, as heard on Marvin Gaye's "I Heard It Through the Grapevine."

13 Cut-down Leslie 120, a single-speaker/rotor model ideal for guitarists. ♫

MARIAN PETRESCU

The Next Great Jazz Virtuoso

BY ROBBIE GENNET

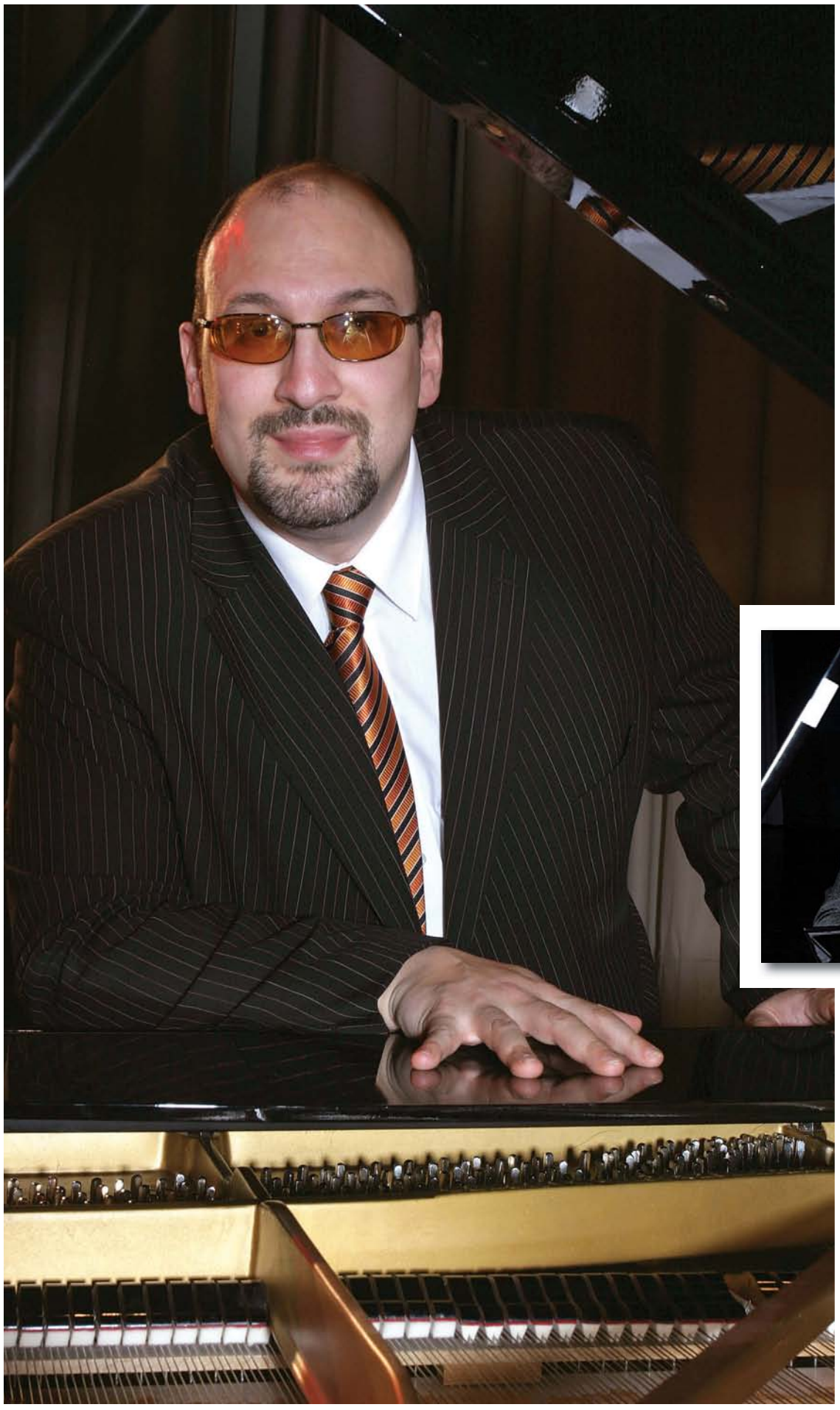
UNLESS YOU'RE A FAN WHO FOLLOWS JAZZ AND CLASSICAL PIANO, THE name Marian Petrescu might be unfamiliar. Not for long. Petrescu has been causing a stir with his blazing technique and passion for performance. Growing up behind the iron curtain in Romania, Petrescu and his family escaped to Finland in the mid-1980s, where he began to build his career gradually. At age 19, he represented Finland in the Martial Solal competition, winning second prize and establishing himself on the international scene. In recent years, he has toured the world and visited the U.S. several times. Last year, he debuted at the Playboy Jazz Fest as the featured soloist in an Oscar Peterson tribute, raising his profile with a blazing opus of the technically difficult program.

Contrary to how some critics have unfairly tagged him as a Peterson sound-alike, Petrescu has a wide variety of styles in his grasp. "Though Oscar is a significant influence on my playing, he's not the only one," says Petrescu. "But even though I don't like labels, I don't feel it hurts to be compared to Oscar Peterson!" He also recognizes that all good musicians stand on the shoulders of giants: "We can know great players by how they phrase and the sound of them," says Petrescu, "but everyone stole something from someone. You *must* have influences. Otherwise you can't do it. You play all these different styles and draw them all in and make your own thing. On the other hand, nobody can *be* somebody else no matter how they try. We have different hands, so we can't sound exactly like someone. We can play their style, but you never have to copy solos from the record. Play the style, not the notes."

It's the Harmony

Of all the wonderful qualities of Petrescu's playing, it's his exuberance and joy that always captivate his audiences. When asked how he keeps himself challenged, he says, "By living life, seeing new places, meeting new people, and keeping them entertained everywhere I go. I like the challenge of pleasing every person in my audience." He describes his adopted home country of Finland as a great place with a thriving music scene full of very good jazz and classical musicians. After almost 25 years there, he considers its musical culture home, and is quick to point out other talents, such as Esa-Pekka Salonen, a conductor and musician he says is a worthy representation of Finland in the 21st century. As to his favorite composers of all time, Petrescu cites the great

ANNA MCAMPBELL



Romantics—Rachmaninoff, Chopin, and Liszt—the latter of whom he calls "the emperor of the piano." It's Rachmaninoff, though, who he credits for the harmonic foundation of his style.

"I like to use the harmony of Rachmaninoff a lot," says Petrescu. "It's how he constructs his chords. He was the biggest harmonist, in my opinion. Also Prokofiev, but he didn't get as deep. In Rachmaninoff, you also find logic and beauty. Sometimes Prokofiev will go very far out and get very difficult rhythmically. But Rachmaninoff is full of soul. It's beauty—everything he's doing. He didn't play a million notes, but every note is in the right place at the right time. Everything matters. He'd sometimes put the harmony in the bass, sometimes in the middle, and sometimes on top."

Petrescu emphasizes that the most important thing is not to copy anyone verbatim. "You can look at Charlie Parker solos, look to John Coltrane . . . but look to *learn*," he says. "See what they use—what scales, what modes. The most essential thing is how you present your piece, the interpretation. You must have sound, beauty, conception, the melodic patterns between the written melody and any improvisation. This must all get you to the point to improvise *logically*. It's much more beautiful to play logically than illogically." That's not to say that there can't be beauty in the *avant garde*, but Petrescu insists beauty depends on harmony: "Your energy should go towards the harmony, not the difficulty. Go too far towards difficulty for its own sake, and you lose the beauty of the music. There are many kinds of pianists in the world. If someone wants to do something personal and make their own music, there's nothing bad about that. But if I go to listen to a jazz piano player, I want to hear *jazz*. I want to see how he or she swings, how he or she combines phrases, how the piano sings through the hands."

Performance Values

To Petrescu, a big part of performing with others involves using your most important piece of equipment: your ears. "It's not about theory and mathematics," he says. "It's about how you hear another person onstage. You must be able to hear what you play and to concentrate with the other ear to hear what he's playing. And you have to feel what he's playing and you have to answer. It's like a dialog. Music is like talking, like poetry. One of the most important things about playing with someone is what kind of telepathy you have with them."

Selected Discography

Thrivin'—Live at the Jazz Standard (Resonance Records, 2010)

Resonance Big Band Plays Tribute to Oscar Peterson (Resonance Records, 2009)

When playing jazz, Petrescu prefers modal exploration. "In free improvisation, I like to use a mode and grow in that same mode," he says. "If I play free music, I don't like to play everything that's coming into my head. I like to choose a mode to grow from and come back to the same mode. It's free, but with a limit." That being said, Petrescu likes to leave some of his performance up to the mood of the moment. "I like to play in the moment. I never like to study what I'm playing. Play what you hear. Learn, close the book, and go play from memory." And in order to have the chops, you need to put in the time, whether you pursue traditional lessons or not.

"If you don't have a classical background, then you still have to train your skills," says Petrescu. "When you have good fingers, then you can command the instrument. But if you have a classical background, the instrument is easier. You can do everything that you're thinking and that's most important." But you also must have a sense of dynamics. "The scale doesn't have to be played mechanically," he says. "You don't have to *push*. When you play scales you have to be very gentle and let the piano sing. Don't give everything away all at once."

Petrescu seems like he never runs out of things to play and is never bored. "With the piano, you can never say that everything has been done," he says. "You always find things." That goes for both seasoned players and beginners. "Go listen to music first. Open your ear and your mind and let the heart sing what it hears. It's singing *in* you, you never stop. I started jazz scatting to Ray Brown from the time I was eight or nine years old. I put Oscar Peterson on and scatted to every record with Ray Brown. This makes the music sing inside of you. Of course I want other people to enjoy my playing, but primarily, I have to love what I'm doing."

Petrescu emphasizes the importance of connecting with the listener and laments the current state of live jazz. "In Europe, they'll be onstage and they play for themselves. That's why jazz loses the audience. You have to make the listener live with you, so that the music doesn't stop at their ears; it comes inside their souls. Don't just play for yourself. Play for the audience. Move them!" And don't forget that without those seats filled, there's no show. "I always think about what the audience says of it, not the musicians. As musicians, we're never satisfied. Look at Erroll Garner. He was the most lovely piano player for the audience, even though he could play a lot of stuff that nobody can and was the only piano player that sometimes played with all ten fingers at once."

Above all, Petrescu feels that you shouldn't stray too far from your chosen idiom, lest it become something else. "The most important thing in jazz is not to play something that has nothing to do with jazz," he says. "You must sound jazzy—the swing, the chord voicings, all those things." Populist fare like ragtime works well because of how it connects to the audience. "It sounds beautiful and it has a logic. It's also easy for listeners. If it's beautiful and funny, they come to listen to you not to concentrate; they come to enjoy it."

Enjoy it they do, in ever-greater numbers. Petrescu has recorded two well-received albums on Resonance Records, a home for exemplary jazz pianists such as Bill Cunliffe and Donald Vega, and he is preparing his next recordings as you read this. And though Petrescu's fiery chops delight and dazzle fans new and old, it is perhaps his heart that touches listeners the most. That a humble Romanian expatriate from Finland could make it to the Playboy Jazz Festival should inspire anyone with a dream to work hard and, in the words of Petrescu, let the heart sing what it hears. ♫

Marian demonstrates different piano styles in our exclusive video interview.
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Editors' Choice electronic MUSICIAN 2012

EXPENSIVE LOOKS

On Samplecraft and Circuit-Bending

BY LORI KENNEDY

HAVE YOU EVER FOUND YOURSELF AT A LOSS FOR WORDS WHEN TRYING TO describe a particular artist's sound? Are you struggling with phrases like "It's sort of dance-rock mixed with old-school Willie Nelson, Kraftwerk, and Jay-Z"? Welcome to modern electronic music, where genre bending has become the norm.

Enter 21-year-old Brooklyn producer Alec Feld (a.k.a. Expensive Looks), who delivers chopped up and looped-out Chicago house-psych-garage-soul-pop that's as danceable and funky as that description suggests. Feld has been compared to M83, and while there are similarities, Feld's style is much grittier. All the tracks are perfectly restrained, as though he took a bombastic Chicago house record, injected it with blissful pop, then ran it through an overdriven filter. *Keyboard* got the inside scoop on this beautifully dirty dichotomy.

Did you use analog synths to create *Dark Matters*?

Yeah—it's half synths, half software. But I used the Korg R3 a bunch. I started out making music using synths. A friend of mine wanted to trade synths for a record player, and so I took her up on that and ended up with a Minimoog Voyager. It was about two years ago when I got the Voyager, and I began by mashing keys on it and recording percussive samples through the built-in microphone [on my MacBook] into Logic. For me, it was just about seeing what all these different knobs did. Opening synths, circuit-bending them, and ruining them—all of which I regret. Then I got into modifying toys—a friend of mine circuit-bent a Furby, and let me tell you, I've never heard an instrument like it.

A Furby?

I want to take a thousand of them and steamroll right over them! [*Laughs*.] I also circuit-bent a top that spun around and had LED lights. When you spun it, it played a MIDI version of "Axel F" from *Beverly Hills Cop*. I decided a few months later that I should invest in something other than a toy. So I got the Minimoog fixed, sold it, and got a Korg R3. Then, about a year ago I picked up [Cycling '74] Max/MSP. I integrated it with Ableton Live using Max for Live. The album is a combination of

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the Korg R3, Max/MSP, some traditional DSPs, and a bunch of different samples.

Can you talk a bit about the samples?
I didn't really know how to sample. I used to simply sample two seconds of a song and then loop it over and over again. But I started using Max/MSP to manipulate the samples. I took some garage-rock samples—stuff I'd find on odd compilations or on dirty vinyl from the weird record store run by some guy who really misses the Replacements [*laughs*]—and I'd slow them down, cut them up, or rearrange them. Then I'd take them into Max/MSP and manipulate them. On *Dark Matters*, the samples were done using MIDI keyboards—I use an M-Audio Axiom 49—in terms of cutting them up and triggering them from keys or using my Livid Ohm64 grid controller.

If you can build your own hardware and software, there really aren't any limits to what you can do. I'll take part of a song and cut it up into eight, 16, or 32 pieces and use those as cues. In a way, I'm using all those one- or two-second bits *as* my "synth." I also use the vocoder input on the Korg and run samples into that—then you get some really weird s***.

What do you use for drums and bass in your tracks?
I have this ridiculous 10GB folder of drum samples, and usually pick something from that. Same with bass. I use a bunch of different Max patches that I run into Ableton, which is at the core of everything I do.

I use the Ohm64 to cut up a lot of samples. There is this awesome patch written by Trent Gill in Melbourne, who performs as Parallelogram [parallelogram.cc]. He made a sampling instrument for grid-based music controllers called MLRV. It takes a grid controller and turns each row of buttons into a line of samples. You can take a half-second of a song and get eight steps to it—then you can screw around with the eight steps. But it's all done by hand and by ear. A lot of *Dark Matters* is completely atonal. The amazing part about atonal samples and making atonal songs is that it sounds like I'm doing something "wrong," but then I get this weird, awesome feeling that it sounds so right.

How did you construct "Nothing More"?
I took a sample from an early '60s beat track and made it the whole background sample—that weird, meshy thing. I sped it up, slowed it down, cut in half, and then warped it some more. The background drums are also samples from a '60s or '70s psych garage-rock track. The rest of it is synthesizers and vocals using Max/MSP. After I created the samples, I laid down a bass line, then the vocals.

How did you record your vocals for "Nothing More"?
I used an AKG Perception 220 mic and ran that into an [Avid] Mbox. This is the scary part: I do all recording, arranging, mastering, mixing, and final rendering in Ableton. Everything is done in Ableton. There isn't much vocal processing—there's some compression, EQ, and a little reverb.

What gear is in your live setup?
An Akai APC40—they're so inexpensive and awesome, especially if you're working in Ableton Live. The songs are very sequenced, and with 40 layers going on, it's almost impossible control each layer live, so a lot of it involves pre-programmed channels. I can make a bunch of two-bar loops and then trigger them. The APC40 can handle eight tracks, and I use all eight and assign a bunch of different stuff—one will be kicks, one will be snares, one will be synths, one will be bass lines, and so on. If I get shot dead onstage, it will keep going. [*Laughs*.]

I have everything running in Ableton on a MacBook Pro. I've got another MacBook Pro that also runs Ableton, plus visual software. With a lot of *ad hoc* wireless networking, I'm able to use the Livid Ohm64 to control Ableton and the APC40, along with all of the visuals running on the other Macbook Pro. I MIDI-mapped a Max for Live patch in Ableton on my main laptop. That patch is networked with a duplicate of itself running in Ableton on the second computer. Whatever information *that* patch gets is sent to the VJ program. I have an enormous network of patches for my live show, as my visuals are automated based on what sound is coming from my rig. I also have a Roland SP-555 for some basic samples. I think I need a bigger table!

Musically, *Dark Matters* is upbeat, but the lyrics deal with depressing subjects. Was that dichotomy intentional?
This is the most depressing album I could've ever created. [*Laughs*.] To answer your question, yes. If you look back at Chicago house, you see a lot of competition: Who can step it up for the dance floor better? But a lot of house tracks talk about the most downright depressing stuff. The comedian Pablo Francisco would say, "People will dance to *anything*, even if the lyrics are "kill myself, *kill myself*!" A lot of the tracks are 120bpm, so they're dance-y. But who said upbeat has to mean happy? Most tracks on this album are about frustration in the pursuit of happiness. I'd say I'm a reasonable pessimist. [*Laughs*.] ♫

JOLENE KAO

Check out the sweet video for "Nothing More."

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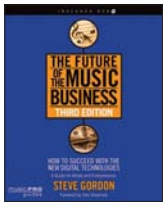
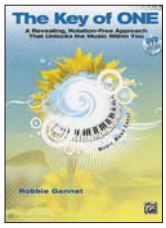
TRENT REZNOR AND ATTICUS ROSS
The Girl with the Dragon Tattoo
After Trent Reznor and Atticus Ross' Academy Award and Golden Globe-winning soundtrack to the Mark Zuckerberg biopic *The Social Network*, director David Fincher hit up the duo again for his American remake of the Swedish thriller. Reznor and Ross have achieved electro nirvana in this tension-filled, three-hour/39-song package. Massive swirling synths add to the overall dark atmosphere of *TGWTDT*. "Perihelion" is tense and distorted, with myriad creepy synth stabs fading in and out, almost out of earshot. Reznor is a trained pianist, and beautiful, discordant keys are sprinkled throughout, especially on "What If We Could?" Reznor and Ross used the Swarmatron (reviewed Dec. '11) on *The Social Network*, and *TGWTDT* is also peppered with the handmade analog synth's beehive sound, especially "Cut Into Pieces." Brilliant. (nullco.com) LORI KENNEDY



BOOK/DVD
STEVE GORDON
The Future of the Music Business
Despite the near constant change in the technology behind recording and distributing music, a great many artists and executives still cling to outdated music-biz models. The third edition of *The Future of The Music Business* attempts to remedy that with a convincing cocktail of legal, business, and practical advice. Featuring a DVD of a recent Gordon lecture at NYU, along with powerful insight from artists and industry movers alike, *TFOTMB* is required reading for anyone doing musical battle in the digital age. (halleonardbooks.com) JON REGEN

STING
25 Years
"What I've learned over the years is that miracles don't happen and what works is the process," Sting writes in the liner notes for *25 Years*, his three-CD-plus-DVD solo career retrospective. The process he speaks of shines in full, recorded glory here, with 55 tracks evincing his continued quest for aural eloquence. From his early, jazz-tinged exploits on *The Dream of the Blue Turtles*, to later explorations into dance, country, and classical fare, this collection is powerful proof of Sting's singular sonic imprint. Timeless. (sting.com) JON REGEN



BOOK/DVD
ROBBIE GENNET
The Key of One
We've hesitated to review this, as the author is a regular *Keyboard* contributor and we didn't want to be making a shameless plug for one of our own. But this visual and sheet music-free method for to learning to play keyboards is so effective and downright fun that we're doing you and him a disservice to stay mum any longer. Gennet focuses on attitude as much as on notes—all in a passionate, personal, and uncondescending way that keeps beginners coming back to the piano. (alfred.com) STEPHEN FORTNER

THE PHANTOM FAMILY HALO
When I Fall Out
Expect more than the unexpected on this ambient electro trip from Dominic Cipolla. With '70s-style production that recalls everything from Phil Spector's wall of sound to the strut of Bowie, the album is both introspective and outright fun. Rarely has a release sounded more analog than Cipolla's latest, which champions vintage keys and slapback delays over virtual instruments. Check out the seductive opener "The Fall Out" for just one example of the raucous ride that awaits. (knittingfactoryrecords.com) JON REGEN

GABBY LA LA
I Know You Know I Know
Ever have pleasantly surreal dreams in which you were a kid again, attending grade school and exploring a world that was all new? This is that feeling on a CD. Performed and recorded entirely by Gabby on sitar, ukulele, theremin, and a Nintendo DS running Korg's DS-10 synth app, the musical earworms fall somewhere between eight-bit video games and Bollywood musicals where even villains burst into good-natured song. Gabby's little girl voice and cartoon-cute image belie her expert counterpoint, multi-instrumentalism, and genre blending. These skills reach a peak on "Nap Time," while "Rainbows" evokes early Erasure. Spin this disc and just try to remain surly—I doggie dare ya. (gabbylala.com) STEPHEN FORTNER

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Earth, Wind, and Fire famously used a large horn section to great effect.

Think Like a Section

BY BRIAN CHARETTE

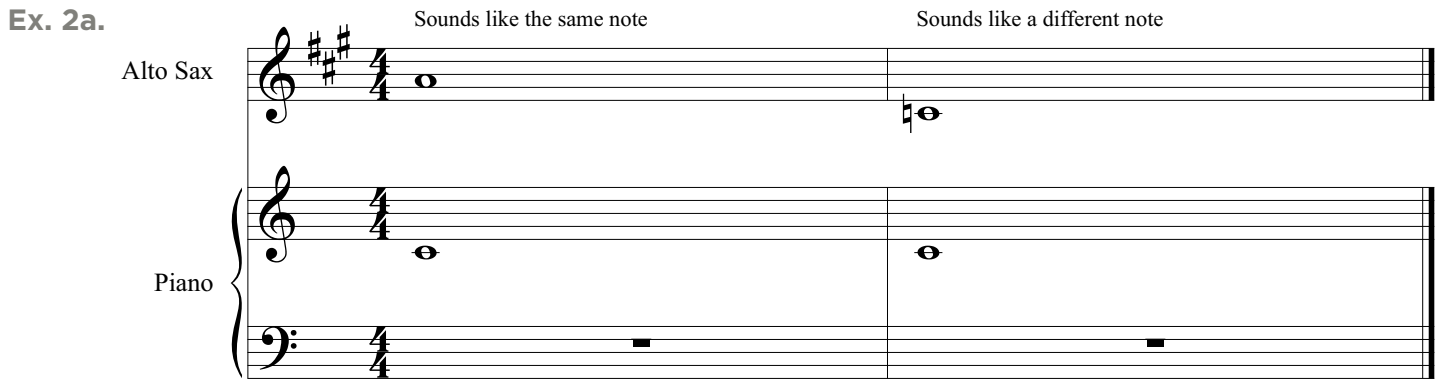
KEYBOARDISTS HAVE AN INHERENT UNDERSTANDING OF CHORD CONSTRUCTION AND HARMONY. With a little work, we can parlay this into realistic horn and string section arrangements that are just as useful for live playing as they are for film and TV composing. Start by thinking of each of the notes in your chords as separate instruments on their own. The first thing to learn is the playable range for each instrument. It's also important to transpose to the key each instrument is in—for example, writing a part on piano, but in the key of *E*♭ for alto sax. The techniques herein will go a long way towards making all those wonderful orchestral samples in your synth or computer sound like the real thing when you put them together.

1. Organ to Horns

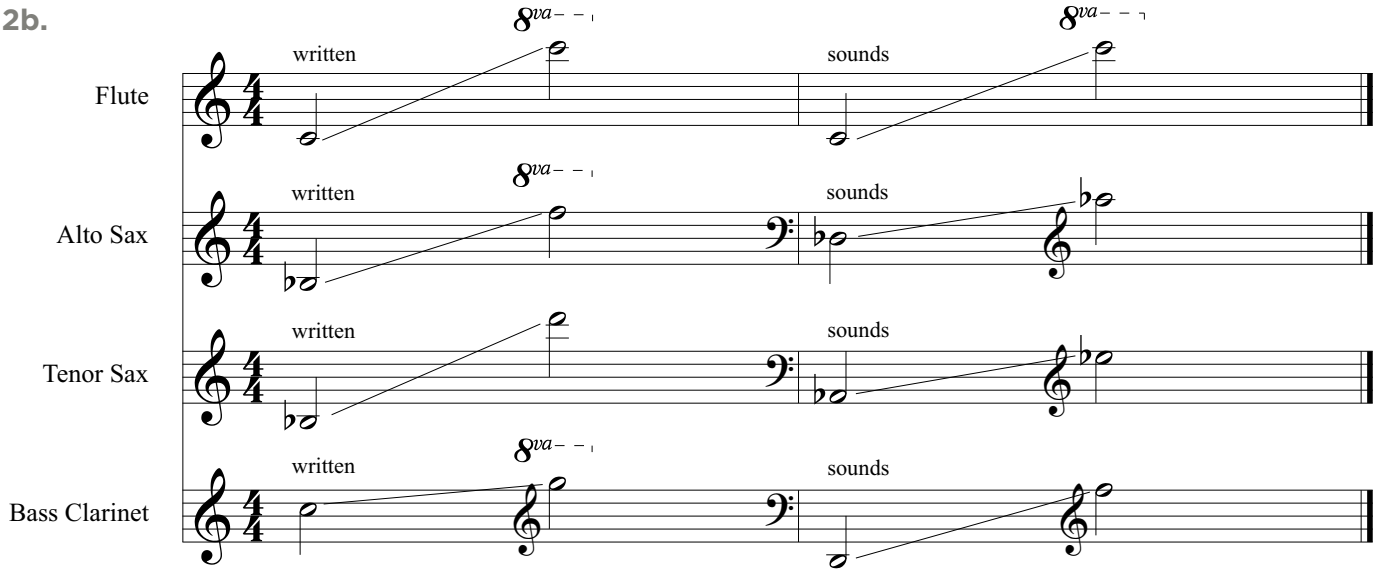
I've taken three chord voicings for organ and assigned each note to a particular wind instrument: flute, alto sax, tenor sax, and bass clarinet. For now, we'll simply keep everything in concert key (piano *C*) without the usual instrument transpositions. In **Ex. 1a**, I've assigned each instrument a note from my *Cmin11* organ chord. A great method for scoring for horns is to use "drop-2" and "drop-3" voicings, which means taking either the second highest (drop-2) or third highest (drop-3) note in the chord and making it the lowest note of your new voicing. In **Ex. 1b**, the drop-2 note (*B*♭) becomes the lowest note of the *Cmin9* horn voicing. In **Ex. 1c**, the drop-3 note (*G*) becomes the lowest note of *Cmaj9*.

2. Ranges and Transpositions

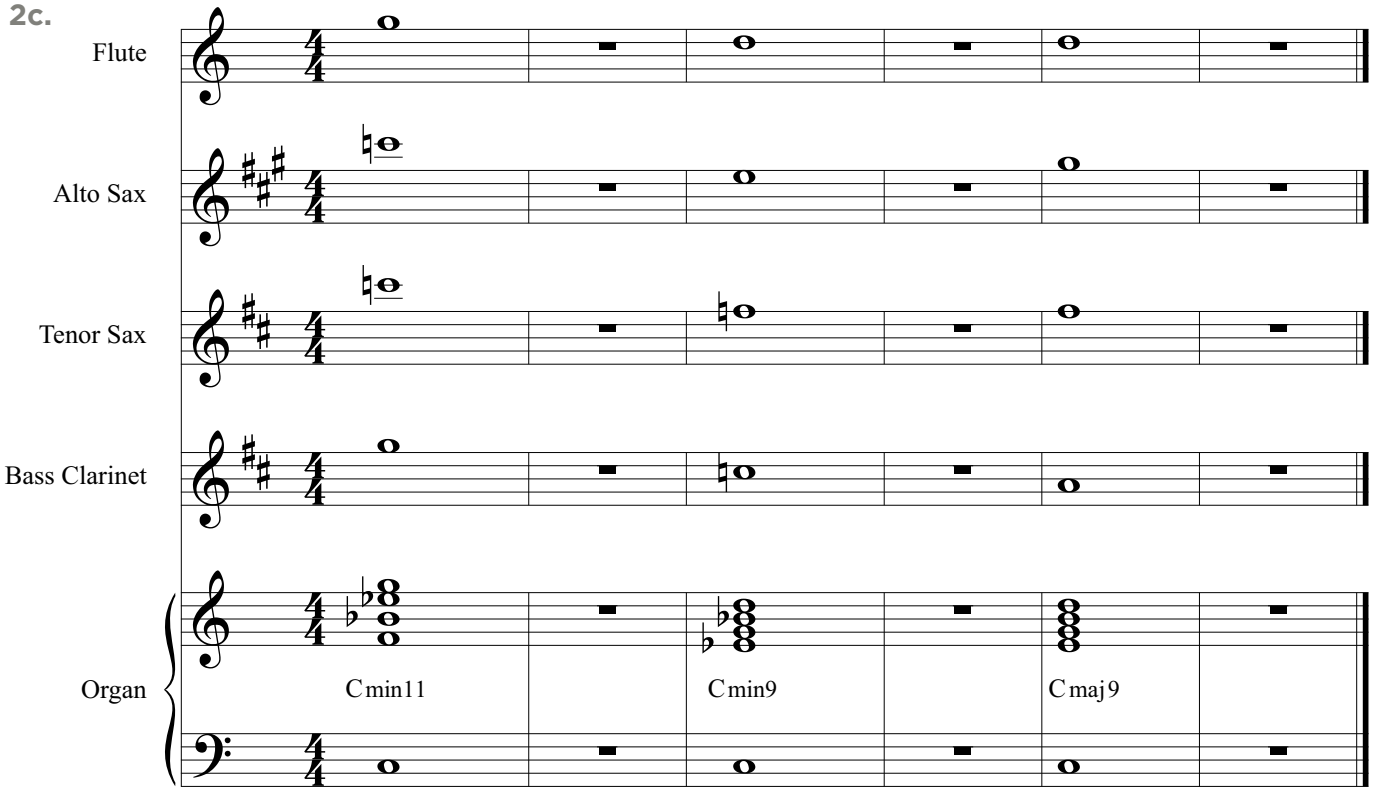
Many instruments, especially horns, are not *C* instruments. For example, if a pianist and alto saxophonist each play notes written as *C* in their respective sheet music, these are in fact different pitches. **Ex. 2a** illustrates how an alto sax playing what's written as *A* above middle *C*, and a piano playing middle *C*, are in fact playing the same pitch. **Ex. 2b** is an introduction to wind instrument ranges and transpositions. Always be careful when writing to high or too low in an instrument's playable range. **Ex. 2c** is how our chords from **Ex. 1** look when properly transposed to their instruments' native ranges and keys.



Ex. 2b.



Ex. 2c.



Required Reading

"Mastering orchestration is a formidable task," says Grammy-nominated keyboardist **Brian Charette**, who has performed and recorded with Joni Mitchell, Lou Donaldson, Bucky Pizzarelli, Michael Bublé, and Rufus Wainwright, in addition to leading his own combos. "Read Rimsky Korsakov's *Principles of Orchestration*, the master text on the subject." Brian's latest album is *Music For Organ Sextette*. Find out more at kungfugue.com.

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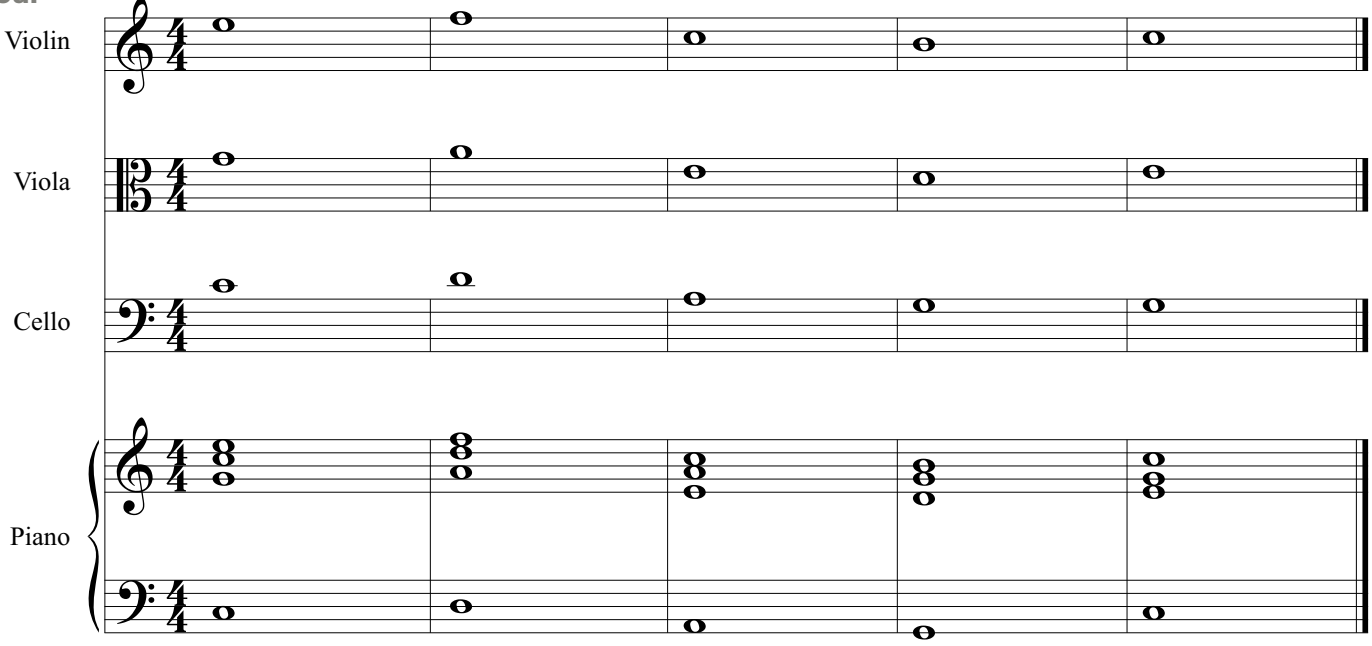
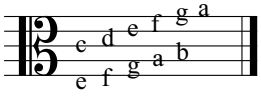
3. String Trios

Let's say you're producing a session and the artist says, "I'd love a real string trio on the bridge." Here we'll use violin, viola, and cello, written drop-2 style. This means the middle note of the original piano voicing will be assigned to the lowest string voice (the cello). Violin and cello sound as written, but viola is written in the alto clef, which many keyboardists aren't used to seeing—it simply puts middle *C* on the middle line of the staff. **Ex. 3a** illustrates how our piano part looks transposed into a string arrangement. **Ex. 3b** shows the notes of the alto clef.

Ex. 3a.



Ex. 3b.



4. Funky Organ Horn Hits

Ex. 4a shows how to turn funky organ comping into horn section hits. Here, I've taken a comping pattern from an organ part and expanded it for a horn section. Notice the drop-2 technique in the tenor sax voice. This example is shown in concert pitch, while **Ex. 4b** shows the proper horn transpositions. Remember that trumpet transposes up a major second, alto sax up a major sixth, and tenor sax up a major ninth. Just like strings, each instrument has its own set of peculiarities. Try experimenting with accents, crescendos, sforzandos, and other dynamic effects in your horn writing to expand your arrangements' aural impact.

Ex. 4a.

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Ex. 4b.

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Strategies for Supporting Singer-Songwriters

BY JOSH DODES

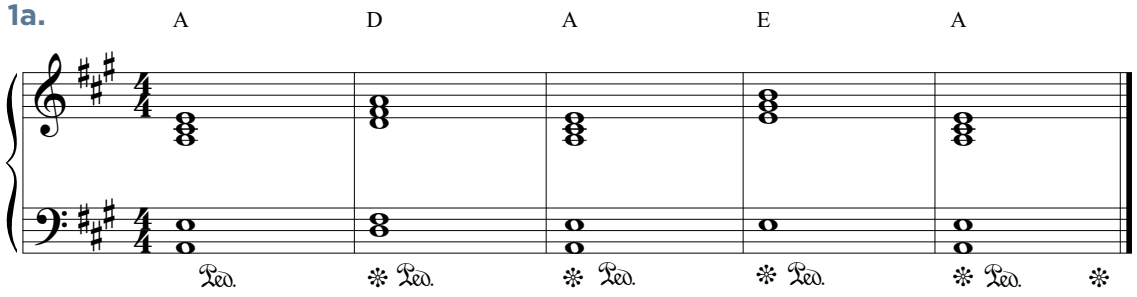
FEW GIGS ARE MORE CHALLENGING AND REWARDING FOR A KEYBOARDIST THAN PLAYING BEHIND singer-songwriters. More often than not, my goal in this role is to add richness and texture to the music, while remaining simple and unobtrusive. Whether I'm playing in an intimate venue or on a giant arena stage, I'm always trying to answer the same musical question: "How can I best serve the song and support the singer?"

Let's look at several ways of answering this question. The first two examples are particularly useful for ballads and mid-tempo tunes, where an important job of the pianist is to make chord changes flow seamlessly, and where appropriate, to expand the harmonic structure of the accompaniment. You can practice these concepts with almost any chord changes. The second two examples are more appropriate to upbeat, rhythmically driven tunes. Listen carefully for places in a song where accents can help propel both the singer and the song forward.

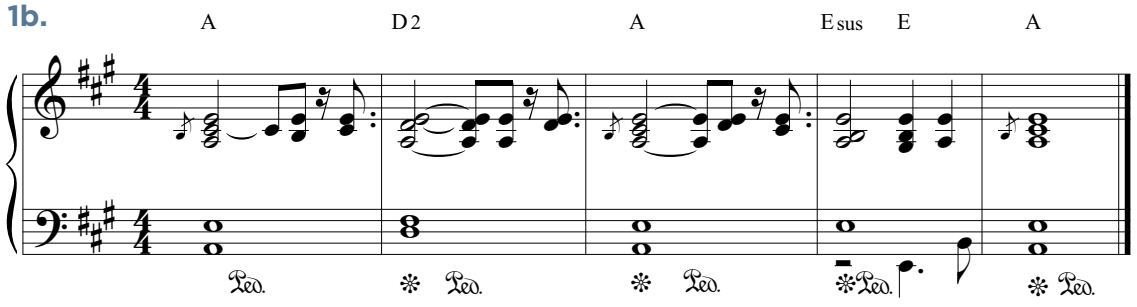
1. Seamless Changes

This example illustrates a short chord progression typical of many singer-songwriter-style songs. **Ex. 1a** shows each chord played in the same inversion, which can feel blocky and disjointed behind a vocalist and band. **Ex. 1b** shows one way to glue the chords together and make things feel more connected. Here, I keep the top and bottom notes of my right hand voicings relatively consistent, placing *leading* notes in between them to connect the chord changes.

Ex. 1a.



Ex. 1b.



Hear Josh play these examples.

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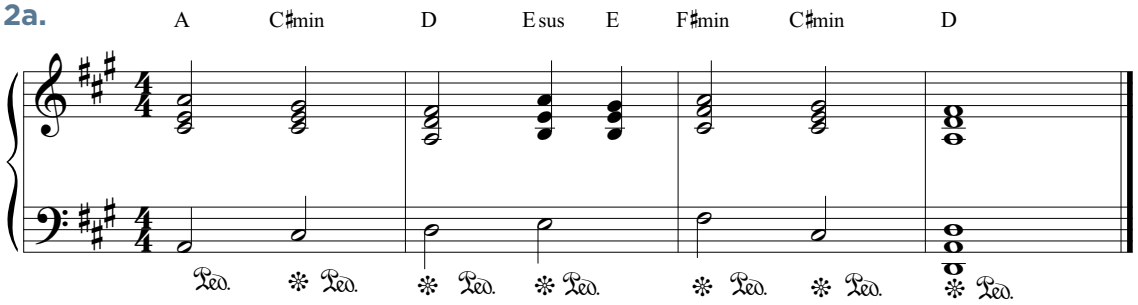
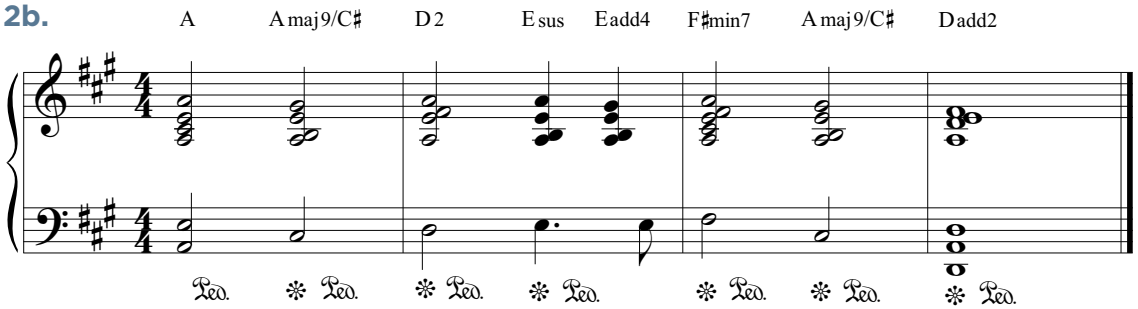
2. Richer Chords

Ex. 2a is a short chord progression built with triads. Now, there's nothing wrong with a good triad, but when you're playing the main comping instrument in a ballad, it's a good idea to add harmonic interest by using color tones like sevenths, ninths, and 11ths in an inversion next to the root or third of the chord. This is shown in **Ex. 2b**. Tip: On chords like the *Amaj9/C*♯ in bar 1 and the *Esus* and *Eadd4* in bar 2, I play the bottom two notes of the right hand with the outside of my thumb, hitting both notes at once, at a nearly right angle to the keys. It's a great technique for bigger chords with two adjacent white keys on the bottom.

Ex. 2a.

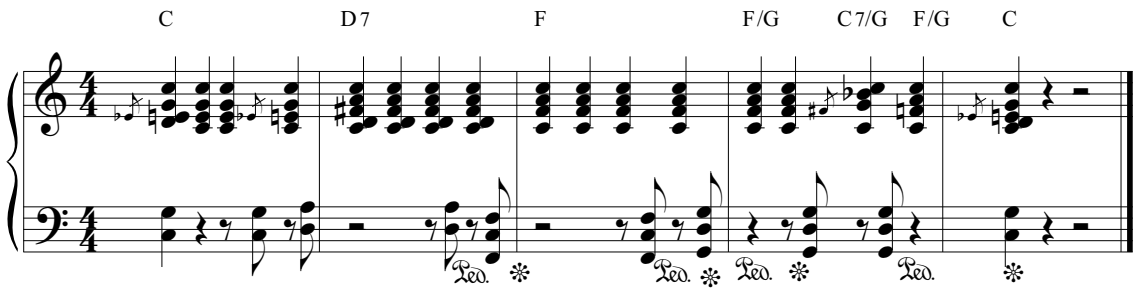


Ex. 2b.



3. Left-Hand Drum Lock

On funkier or more rhythmically driving tunes, I often lock my left hand in with the kick drum pattern for extra punch, underneath a right-hand quarter-note pedal, as in **Ex. 3**.



GKPHOTOGRAPHY NYC

Rhythm Role

"The key to supporting singer-songwriters is to think about what a rhythm guitarist would do, and what the kick drum is *already* doing," says **Josh Dodes**, who has toured and recorded with Marc Cohn and Toby Lightman, as well as with his own Josh Dodes Band, featured on VH1's Emmy-nominated series *Bands on the Run*. Find out more at joshdodes.com.

4. Rhythm Piano

If there's no rhythm guitarist onstage with you, guess what? You're it! I actually love playing this role. I've developed a "bouncing" technique for this kind of situation, as seen in **Ex. 4**. The focus here is on varying the off-beat, sixteenth-note accents while keeping time completely even across two hands. Try putting the accents in different places in the beat to change the feel subtly. This works well for choruses or at the ends of tunes to bring the energy level up a notch.

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Improvise With Intervals

BY ALAN PASQUA

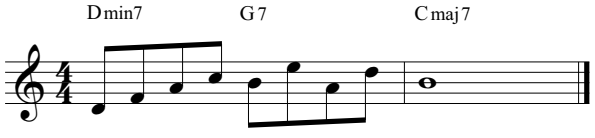
INTERVALLIC IMPROVISATION LEADS TO A MORE INDIVIDUAL STYLE OF PLAYING. IT CAN HELP YOU find your own voice by forcing you to avoid familiar avenues and improvisational habits. I discovered this style by listening to jazz greats like John Coltrane, Woody Shaw, and Larry Young. Their ability to jump around a chord instead of always playing through it in scale fashion always intrigued me. Improvising on a chord progression with an interval-based approach is less predictable than the scalar alternative. Let's examine the difference between these two approaches. On piano, it may feel more natural at first to play notes that are close to each other. Try the intervallic examples in this lesson, though, and you'll be surprised at how easily they fit the hand—and how fresh they sound.

1. *ii-V-I* Progression

Let's first look at the difference between scalar and intervallic playing over a staple of jazz improvisation, the *ii-V-I* progression. Scalar playing involves using notes of the scale almost totally in order (as in **Ex. 1a**), while the intervallic playing in **Ex. 1b** has only one set of adjacent notes in the entire phrase. With intervallic playing, you end up exploring more of the chord's extensions. Notice how the top *E* in **Ex.1b** sounds more like the ninth of a *D minor* chord, instead of the second.

Ex. 1a.

Ex. 1b.



SOUNDCLOUD

See Alan Pasqua play live with Allan Holdsworth, and get audio examples of these techniques.

keyboardmag.com/april2012

2. *iii-Vi-ii-V-I* Progression

Here's another common and venerable chord sequence in jazz. In the scalar approach of **Ex. 2a**, the shape of the melodic line is fairly predictable in both direction and intensity. In the intervallic approach of **Ex. 2b**, the line becomes more interesting and unexpected. Notice that I use some adjacent scale notes on the *A7♭9* chord as an approach for my next leap. It really helps to think of music visually as you explore these new sonorities.

Ex. 2a.

Ex. 2b.

3. *ii-V-I* Minor Progression

Let's explore these two techniques again on the well-known chord sequence known as the minor *ii-V-I* progression. Again, notice the standard direction and tonality in the scalar movement of **Ex. 3a**, as contrasted with the more engaging musical interest in the intervallic motion of **Ex. 3b**. In the latter, I like to use the natural ninth of the *Dmin7♭5* chord. Right at the start, a big leap is followed by a small step. This illustrates tension and release through the use of intervals, and keeps the listener engaged.

Ex. 3a.

Ex. 3b.

4. Turnarounds

Turnarounds are also great places to compare these two playing styles visually. In **Ex. 4a**, the scalar line appears much smoother in nature, while **Ex. 4b** looks more disjointed. The goal here is to make the intervallic example sound as smooth as the scale example looks. Also, I've noticed that intervallic playing seems to generate more rhythm, which can really propel the line forward.

Ex. 4a.

Ex. 4b.

5. Chromatic *ii-V* Chords

In this exercise, **Ex. 5a** uses adjacent notes corresponding to the scale of the chord. In the intervallic **Ex. 5b**, I'm arpeggiating through the chords, changing direction often. This makes the line sound a lot less predictable, and to my ear, much more interesting.

Ex. 5a.

Ex. 5b.

Practice Tip

"To start getting your hands around intervallic improvisation, play any chord, then arpeggiate the notes of its corresponding scale while never playing more than two adjacent notes in a row," advises **Alan Pasqua**, Chairman of Jazz Studies at the University of Southern California. Pasqua began studying piano at age seven, and his eclectic career includes playing with everyone from jazz legends like Jack DeJohnette and Michael Brecker to icons like Bob Dylan, Santana, Aretha Franklin, and Elton John. His latest release as a leader, *Twin Bill*, is out now. Visit him at alanpasqua.com.

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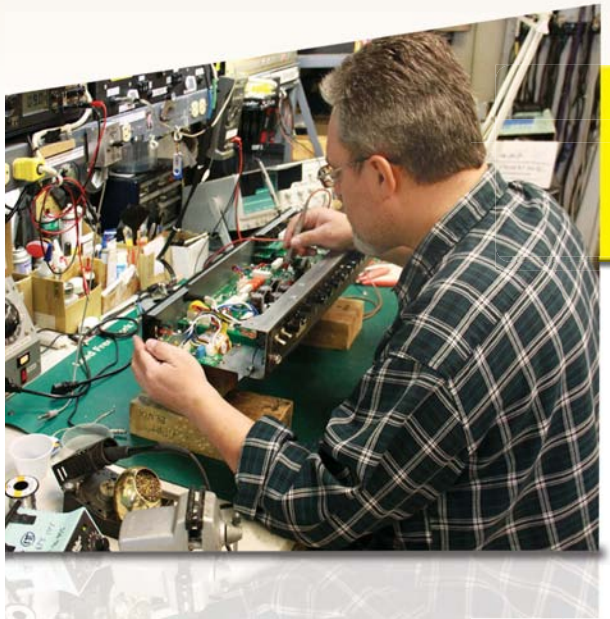

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Hot New Gear of 2012

Standouts From the Winter NAMM Show

BY STEPHEN FORTNER

Synths, Keyboards, and Controllers

ARTURIA MINIBRUTE

This real analog monosynth looks and plays like the love child of an ARP Axxe and an Octave Cat. It has one oscillator, but with blendable waveforms, sub-oscillator, and "Ultrasaw" fattener, that's like saying a properly mixed zombie is just one drink. The filter from the rare Steiner-Parker Synthacon has an aggressive sound you won't hear elsewhere, and the arpeggiator is wicked decent. Be warned: If you use the MiniBrute just for dubstep, we will find you.

$549 | arturia.com

MOOG MINITAUR

As in, miniature Taurus. Moog crammed all the seismic analog bombast of the Taurus 3 into a practically palmtop package. All that's missing are the pedals and preset memory, and if anything, you get more hands-on-knobs control with the Minitaur.

$699 | moogmusic.com

CASIO XW-P1 and XW-G1

We mentioned the XW-P1 in February, but having gone hands-on at NAMM, we're even more impressed with the sound (everything from buzzy synths to organs to orchestral layers is solid), the immediate layering and editing, and the ease and groove of the step sequencer. The G1 ditches the P1's drawbar organ (which sounds surprisingly good) in favor of a pedal-style looper and more dance-oriented sound set.

XW-P1: $699.99 | XW-G1: $799.99 | casiomusicgear.com

Unless otherwise noted, all prices are manufacturer's suggested retail, a.k.a. "list." In most cases, actual prices will be lower.

NORD C2D

However great Nords sound (and they do), their Achilles' heel with serious organists has always been the use of up/down buttons instead of real drawbars. The C2D changes that. Though its drawbars are somewhat fader-like, they have a satisfying but not overdone tactile click, and are laid out like on a vintage B: two sets for the upper manual on the left, two for the lower on the right, and a pair of pedal drawbars in the middle. Like the C1 and C2, it's light enough to carry under one arm.

$4,195 | nordkeyboards.com

BUCHLA SKYLAB

Don Buchla famously holds that synthesizers should free our creativity from the 12-note keyboard. Recently acquired by a group of passionate industry veterans, he's now doing business as Buchla Electronic Musical Instruments. His new Skylab packs true modular power into a fold-up form you can take on a plane with your patch intact—as long as the TSA doesn't evacuate the airport while they ponder which wire to cut.

$14,950 | buchla.com

AKAI MAX49

Never mind the MPC drum pads, touch-fader strips that'd be at home on-board NCC-1701D, arpeggiator, and step sequencer. The real story is that a company as large and arguably mainstream as Akai put analog control voltage and gate outs on a MIDI controller. That's major validation that analog is here to stay and, thanks to a burgeoning number of affordable desktop synth modules, not just for fat-walleted enthusiasts anymore.

$549 | akaipro.com

ALESIS VORTEX

Sporting an accelerometer that lets you affect any MIDI destination by titling the neck, the Vortex takes you back to the '80s in every way except for making your Cavariccis fit again. The pitch wheel, ribbon, sustain button, and octave shifters are all in just the right place, the keys sense aftertouch and velocity, and you get templates for popular software, making this a *lot* of keytar for the money.

$399 | alesis.com

Most Desirable Unattainable

SCHMIDT SYNTHESIZER

On the final day of NAMM, Prince's musical director Morris Hayes texted editor Stephen Fortner: "This keyboard is SICK. Get over here!" Agreed. The sound is indescribably huge and lush, and the one-knob-per-function panel makes inventing new sounds surprisingly quick given the instrument's depth. How much will the ultimate analog polysynth set you back? About 30 grand. Designer Stefan Schmidt has built two so far, and Morris was eyeing this one.

KAWAI CE220

For their sound and keyboard feel, Kawai is a supremely underrated value in digital pianos. With its 192 voices of polyphony, separate multi-samples for each key, and a real wooden action, we'd recommend the CE220 to an educator, committed student, or serious pianist with limited space. It also features four-hands (duet) mode and recording to an attached USB stick.

$2,195 | kawaius.com

NEKTAR PANORAMA

Designed from the ground up to work with Propellerhead Reason, this controller wowed us with its eye-popping design. With a bright OLED display for separate modes that control Reason's instruments, mixer, channels, and transport, if you have this and Balance (see page 58), you have a complete Reason studio.

$599 | nektartech.com

HAMMOND SK2

The 2012 Winter NAMM Show was our first chance to get hands-on with the big brother of the SK1 (reviewed Nov. '11). Not only is it the most compact dual-manual organ, but the extra non-organ sounds (the same as in the SK1, with very good vintage keys patches in particular) really let you put both manuals to good use, playing organ on one and something else on the other.

$2,895 street | hammondorganco.com

Yamaha Throws Down

In a left turn from their caféweight StagePAS systems, Yamaha wants to be the first name you think of for ballsy powered P.A. speakers. The demo we heard of their new DXR series suggests they might get their way—even the eight-inch baby of the bunch was hella loud and clean, with studio monitor-like detail, and we initially thought the accompanying DXS subwoofers were on when they weren't. In addition, 10", 12", and 15" models are available, and the low street prices ($549.99–$799.99) surprised us just as much as the sound.

yamaha.com

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MIDI Controller

SAMSON GRAPHITE 49

We didn't know what to think when we first heard Samson was getting into the black-n-whites game. Then we played the Graphite and loved its keyboard feel. It senses aftertouch, the knobs are the endless kind, it's USB powerable (including by an iPad), and the fit and finish are surprisingly tight. The price even includes Komplete Elements, a 3GB sound set culled from Native Instruments' best.

$199 street | samsontech.com

Headphones

AUDIO-TECHNICA ATH-M50

They may not be a brand-new model, but they sound so good, and are so physically comfy and sonically non-fatiguing, that we can think of no better value in cans that you can really use for mixing.

$199 | audio-technica.com

Audio Interface

MOTU 4PRE

In a crowded field, the 4Pre hits a sweet spot for songwriters: four squeaky-clean mic pres sharing combo jacks with line and guitar inputs, allocated so that you can always have a mic or two plugged in at the same time as a guitar or a stereo keyboard. It goes to 96kHz, sounds more expensive than it is, and is built like your car should be.

$495 | motu.com

Microphones

LEWITT AUDIO

Color us impressed with the build and sound of this relative newcomer's entire line of recording and live mics. While not all models cost under $500, most do, and you could outfit an entire studio for less than the price of a prestige-name European condenser or two.

lewitt-audio.com

Touchpad Synth

KORG KAOSSILATOR 2

Just as fun live as it is for inspiring ideas in the studio, the next Kaossilator adds a second loop bank, letting you cross-fade between the two in DJ fashion. As before, you can set scales up on the touchpad, making it impossible to hit a wrong note as you mash out synth riffs over your loops. You can even record everything to an internal Micro-SD card.

$230 | korg.com

Virtual Piano

SYNTHOGY IVORY II AMERICAN CONCERT D

American Steinways are different animals than their German-made counterparts. Until now, they've also been underrepresented among premium software pianos. Designer Joe Ierardi told us he feels this is his best Ivory piano yet Having heard Mike Garson play it and tried it ourselves (definitely not in that order), we tend to agree.

$199 | ilio.com

Take a Stand

Ultimate Support's new Apex AX-48 improves upon everything about the long-running line of self-storing keyboard stands. The column is now rounded in back. Deploying the legs is easier. The bottom tier now features 18" tri-bars for deeper 'boards. The Pro version features a top mount for a mic boom or, even cooler, an on-the-go version of their ultra-secure HyperStation laptop holder, as shown.

ultimatesupport.com

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In our opinion, this is what the future of live sound looks like. We could write pages about how the StageScape does what it does, but you can get that on Line 6's website. Instead here's our hands-on takeaway: It's so powerful, and its all-visual touchscreen approach is so intuitive, that a total newbie could quickly dial in great sound for an entire band. It has everything you'd expect from a digital mixer (like wireless iPad control and EQ and dynamics on every channel) and things you wouldn't (like feedback suppression and onboard multitrack recording). What it feels like to use, though, has as much in common with mixers as an episode of *Top Gear* does with traffic school.

$2,799 | line6.com

MACKIE DL1608

Fairly or not, the iPad has raised expectations about how user interfaces on keyboards and audio gear should handle. Mackie's response? A digital mixer where the iPad (version 1 or 2; not included) *is* the user interface. The DL1608 hardware handles all the processing, though. You can go wireless or docked, or use multiple iPads to give band members individual monitor control.

$999 street | mackie.com

PRESONUS QMIX

If you have a StudioLive mixer hooked up to a laptop running its remote software, this app lets your band use as many different iOS gadgets as the mixer has aux sends. From your iPhone or iPod Touch, you assign "me" channels to the aux, which you then turn up as a group with the onscreen thumbwheel. Max out your "me" volume, keep turning the wheel, and Qmix turns the rest of the band down in your monitor. Genius ideas are often simple.

Free at Apple App Store | presonus.com

SENNHEISER XSW-35

There are a daunting number of choices in wireless vocal systems. If you need one for your band that resists interference and drop-outs and includes a great-sounding mic, look no further.

$399.95 street | sennheiser.com

Speakers that Stopped Us Cold

The NAMM Show is so noisy and hectic that it's impossible to be drawn across an aisle just by the sound of a pair of speakers. At least that's what we thought until we encountered the **Pelonis Model 42** nearfield monitors. The parallelogram-shaped cabinets let you orient them ideally for your room, and they come with their own 400W power amp that bi-amplifies the woofers and tweeters on either side. If talking about sound is like dancing about architecture, then sign us up for the Frank Lloyd Wright memorial swing marathon.

$999 | pelonissound.com

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Dual-chip: $2,499 | Quad-chip: $2,999 | uaudio.com

YAMAHA O1V96i

The "i" is for interface. The world's favorite compact digital mixer now pipes 16 channels at up to 96kHz to your computer over USB2. This means you can do live sound reinforcement and recording at the same time, with no need for expensive mic splitters or associated extra cables. All the usual candy, like Virtual Circuit Modeling effects and DAW control, is still there.

$2,699 | yamaha.com

WAVEMACHINE LABS AURIA

Forty-eight audio tracks on an iPad 2? It's like *Tron*, only with that digitizer ray zapping an SSL console and Studer A800 instead of Jeff Bridges. PSP and Drumagog plug-ins sweeten your sound, and in-app Dropbox and SoundCloud support share it with others. Even your first-gen iPad will manage 24 tracks, and Auria records up to 18 tracks at once through any USB audio interface. Honestly, this scares us a little.

$49.95 | wavemachinelabs.com

TASCAM iU2

Ultra-compact recording interfaces are multiplying so fast that we almost think they're what lost socks turn into. This one stands out because of the completeness of its I/O—for starters, it includes all the breakout cables for iOS or Mac/PC connection, MIDI, and using either of the two phantom-powered balanced mic inputs.

$199.99 | tascam.com

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KORG

Fig. 1. Logic's ES2, with CC16 (our ribbon/X-axis) set up as Ctrl C, routed to Pitch123 (to control all three oscillators at once). You set range or depth by moving the orange and green triangles.

THE ART OF SYNTH SOLOING

Pitch-Bend as Manual Vibrato

BY JERRY KOVARSKY

IN OUR DECEMBER 2011 COLUMN, WE INTRODUCED USING AN LFO TO PRODUCE vibrato. Since vibrato is a form of pitch modulation, you can also produce it manually, by wiggling the pitch-bend mechanism. Many players like this approach, as it keeps your hand on the same controller the whole time (you're not jockeying between pitch and mod wheels), and lets you be truly connected to the amount of vibrato you produce.

Wheels and Joysticks

Hold a note and wiggle your pitch wheel up and down (or your joystick side to side) to get a smooth, rapid alternation of pitch, first below and then above the held note. With a pitch wheel, you have to get used to moving through the center detent of the wheel, which is a "null" or non-bent safety area. This takes some practice, as you can end up with a jagged or jerky sound at first until you gauge the amount of force needed to travel through the detent smoothly. With a joystick, there's no physical detent, only a null area with a small amount of spring resistance, so it can be easier to get comfortable.

You're aiming for a smooth gesture that sounds like the LFO-driven effect. As you get better, try different depths and speeds by making wider and faster movements. The heart of the technique is that *you* are the vibrato instead of an LFO playing that role.

Next, start with a small amount of slow vibrato, and then intensify both the range and the speed. Gradually increase the "width of your wiggle" and the speed of your movement at the same time. Play some simple licks and introduce manual vibrato at the end of the phrase. Finally, work on some of our bend phrases from previous lessons, learning to differentiate more traditional pitch-bend technique from the "wiggling" to get vibrato on some longer notes.

An important difference in the results of this technique versus LFO modulation is that with an LFO, you can always get the pitch to vary both above and below an already-bent note. With the manual technique on an already-bent note, there may not be any room left to wiggle above the pitch. This happens when your pitch-bend range is set to the same interval you're bending to (+2 is most common). In that case. you can only go below the held pitch and back to the bent result. Try it, comparing the manual wiggle to using the mod wheel. Can you hear the difference? My opinion is that during performance, the difference in the result can be hard to hear, and only becomes apparent in slow phrases with a lot of long notes that are being bent. So this difference is not a reason to avoid the manual technique. Many players tell me they find it a more organic way of adding vibrato to their phrases, and can be less confusing than switching between two controllers (wheels), or two directions of a controller (joystick).

Ribbons and Touchpads

Less common, but worth searching out, are

Fig. 2. Korg Mono/Poly, with CC16 routed to VCO Pitch (to control all oscillators at once). Intensity is set to approximately two semitones.

synths and controllers that offer a ribbon strip or touchpad. Yamaha's legendary CS-80 and GX-1 synths offered ribbon control, as have all Korg workstations since the Trinity, along with their Prophecy synth. Other ribbon-sporting models include the Yamaha Motif ES, XS, and XF; their older AN-1x virtual analog synth; Kurzweil's K2500 and K2600; and Roland's JP-8000. Synths with X/Y touchpads include the Minimoog Voyager, Korg's classic Z1, and Novation's SL Mk. II controllers. Some interesting but pricey instruments like the Haken Continuum and Zen Riffer offer wonderfully expressive touch surfaces. Many "keytars," including the Roland AX series, Yamaha KX-5, and Alesis Vortex have ribbons as well.

These touch surfaces are great for all sorts of modulation and realtime performance control, and especially as a very smooth way to use pitch-bend for manual vibrato. With a ribbon, if the pitch can be set to be original (null) in the center, then you can produce vibrato with a side-to-side motion. Just set the ribbon as the source of pitch modulation, with whatever you want for the maximum bend (two steps, three steps, an entire octave, etc.). With an X/Y pad you only need one axis (likely the X-axis) for side-to-side finger movement. On hardware synths you can usually choose the controller by name, but on a MIDI controller keyboard (or when using a hardware synth as the controller for something else), you'll choose which MIDI control change number (CC) it will send. Then, use that CC as the modulation source in the synth you're controlling. Figures 1 and 2 are examples using Logic's ES2 and Korg's Mono/Poly.

Finally, a cool thing is to set each mechanism to different ranges, so you might use the wheel for your "normal" bends but set the ribbon to a wider range so you can use it for both vibrato and multi-octave dive-bombs. ♫

Jerry Kovarsky has had a more than three-decade career in product development, brand management, and sound design with Korg, Ensoniq, and Casio. An accomplished keyboard player, he enjoys learning and teaching about music and synthesis. And coffee.

Our good friend Jordan Rudess is a master of these techniques and an excellent communicator. This Moog video encompasses many techniques we've been learning, including manual vibrato.

This Korg demo shows how Jordan uses a joystick on some of his signature leads—start around 5:05.

This vintage Rock School episode shows off Jan Hammer's wheel technique, not to mention some classic '80s clothes and gear! Jan shows up at 3:37.

Korg Prophecy promo, with plenty of close-ups of Jan's hands.

Essential Videos

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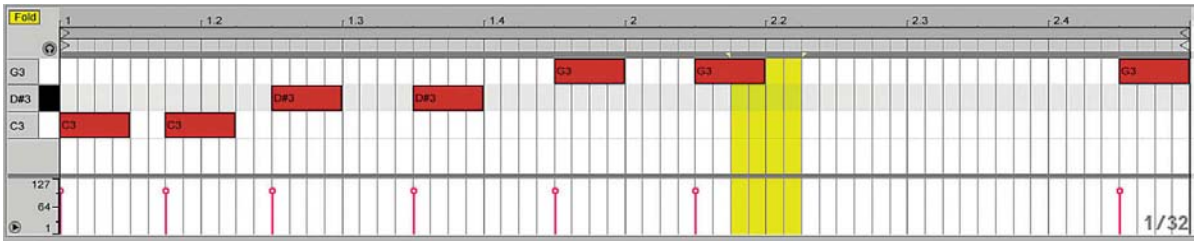
Monster Leads
PART 1

BY FRANCIS PRÈVE

A TIME-TESTED TECHNIQUE FOR CREATING A MASSIVE SOUND IS TO KEEP YOUR OVERALL TRACK VERY simple and focus on three components: punchy drums, bombastic bass, and a simple but massive lead riff that remains interesting throughout the track. In this two-part Dance column, we'll look at a couple of ways to perfect that third element. The first and simpler approach is to copy a single riff to multiple tracks, each containing its own soft synth. Then, using automation, keep changing the timbre of the lead as your dance floor opus evolves. Next month, we'll morph and shift the character of your lead using macros.



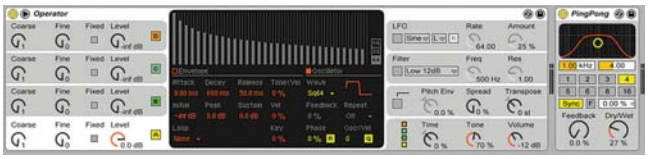
Step 1.
Craft a simple, catchy lead, such as this syncopated lick built on a *C* minor triad.

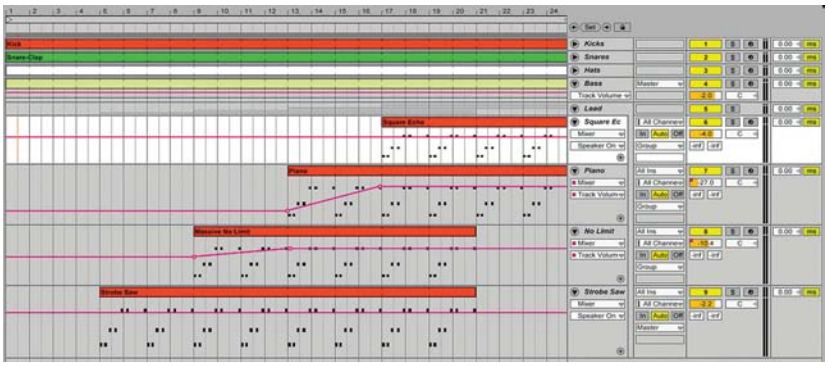
Step 2.
The first layer should sound very basic—like a single-oscillator sawtooth or square wave with the filter wide open and a gate envelope (immediate attack, full sustain, immediate release). For the audio example, I used FXpansion's Strobe as the first synth.

Step 3.
Copy the MIDI info to a new track and create a thicker, wider layer with a more complex patch. Here, I used Native Instruments Massive for a modified version of the "No Limit" preset.

Step 4.
Add an unusual, percussive texture for the third track. Repeat Step 2, and pick a unique—or classic/vintage—sound from your collection of synths. Here, I've used the Korg M1 house piano.

Step 5.
Add a fourth layer with a more ambient texture that includes delay and/or reverb. In the audio example, Ableton's Operator, playing a square wave with a touch of ping-pong delay, did the trick.





Step 6.
Stagger the tracks across your timeline and use volume and/or filter automation to bring each part in over time. Or, slam the part in at a dramatic point in your arrangement. ♫

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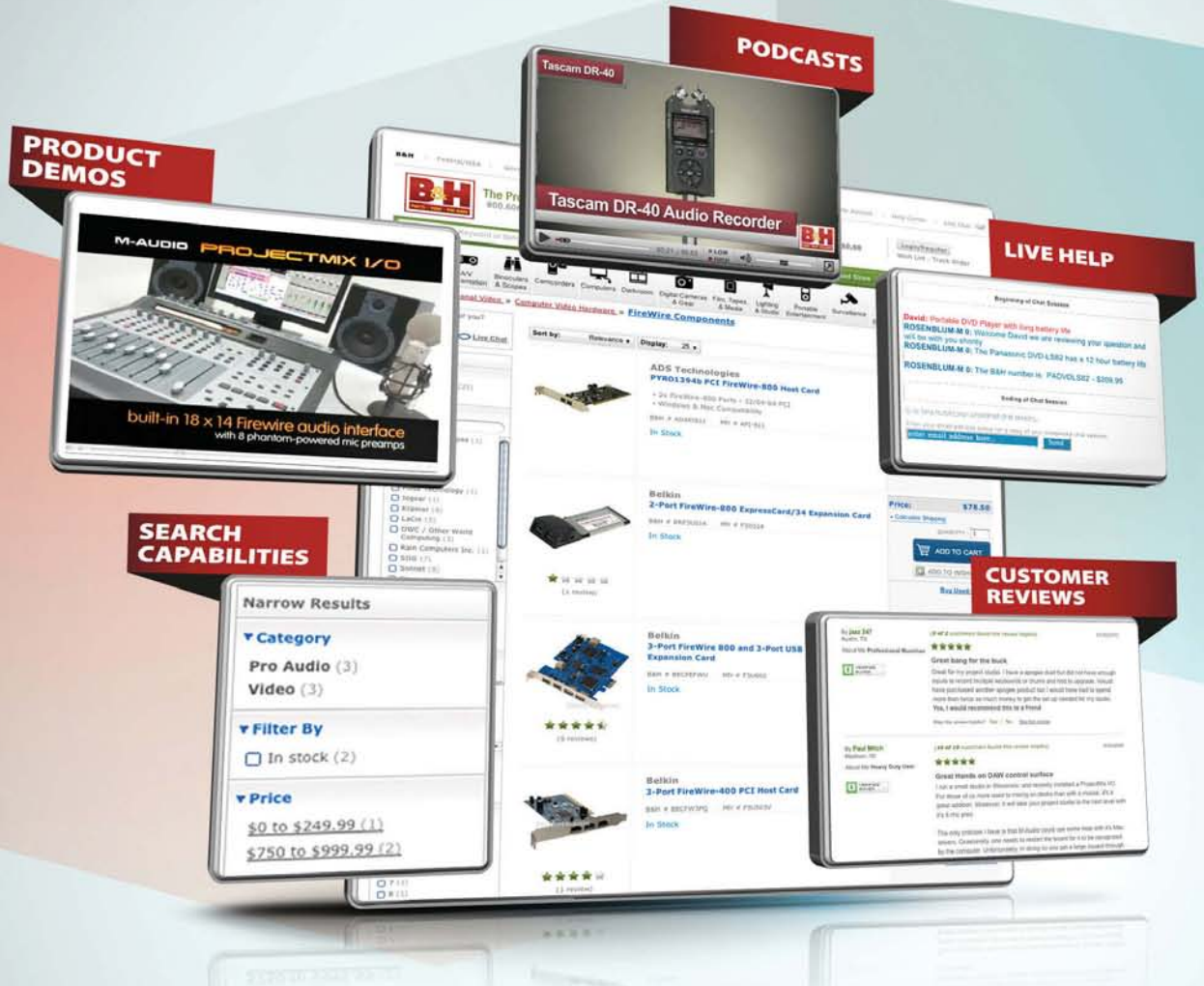

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PROPELLERHEAD

Reason 6

BY JIM AIKIN

FROM HUMBLE BEGINNINGS MORE THAN TEN YEARS AGO—WELL, RELATIVELY humble in retrospect, though justly hailed at the time—Reason has grown steadily to become a music production giant of truly amazing power and versatility. The 6.0 release is an incremental step forward, not a breakthrough, except in one big way: Propellerhead's Record software, which was formerly a separate program that integrated with Reason if you owned both, has now been folded into Reason. As a result, Reason is now both a multitrack audio recorder and a multitrack sequencer with a huge rack of built-in instruments and effects. The main mixer from Record, with its EQ, send and insert controls, and compression, is now part of Reason, as are the Neptune pitch shifter and the Line 6 guitar and bass amp modeling.

Overview

Trying to fit Reason 6 into a few paragraphs is a bit like writing a haiku about the Sistine Chapel ceiling, but I'll try. The best way to get clued in is to download the demo, which will do everything except export audio and reload the project files you save (a fiendish scheme to encourage you to buy).

Reason starts with a big selection of built-in modules—synths, sample players, effects, and other goodies. You can insert as many of these into your virtual studio rack as you need. Most of the modules have jacks on the "back panel," which you access by hitting the Tab key to flip the rack around. Patching audio and modulation signals between modules adds an infinite number of sound design possibilities, ranging from subtle coloration to soundscapes as wide as the universe. The original modules (the Subtractor analog-style synth and the

Snap Judgment

PROS Extraordinary synthesizers and great effects. Seamlessly integrated user interface. Large sound library. Multitrack audio now integrated. Includes time-stretching, and pitch transposing.

CONS Doesn't host third-party plug-ins. No MIDI output. No built-in loop slicing.

ReDrum percussion pattern player) are still here and very useful, but newer modules like the modular Thor synth, the NN-XT sampler, and the Kong drum modeler go much further.

The sequencer records audio tracks, MIDI performances, and automation data. Each track will hold multiple "lanes" containing alternate takes, and multitrack Blocks can also be built and moved around, so you can edit your music in great detail. Audio tracks can be time-stretched, and MIDI tracks can be processed by ReGroove, which adjusts the rhythmic feel by shifting notes and velocities. Tempo and time signature changes are easy to set up.

The main mixer adds a new channel strip each time you add a Reason instrument or audio track to your project. Each strip has its own dynamics section (both compression and gating), two bands of parametric EQ plus high and low shelving, eight sends, an insert slot that can chain as many effects as you want, plus a switchable signal flow (inserts before or after the EQ and dynamics, and so on).

Reason 6 will handle as many audio ins and outs as you could ever need. Direct patching from devices to specific outputs is handled by dragging graphical "patch cords" on the rear panel. ReWire, which Propellerhead created, can be used to link Reason to a host DAW.

The program comes with a huge built-in sound library, including tons of pre-sliced drum and music loops, and if the sequencer is playing (preferably a looped section) while the browser is open, you can audition new sounds seamlessly and hear them in their musical context. The user interface is not only clean and tightly integrated, it's also sexy, with a minimum of hidden functions. The main window is rather cluttered, but the computer's F5, F6, and F7 keys let you switch instantly from the mixer to the rack to the sequencer, so having enough workspace is not an issue. The CPU hit is generally very light.

There's far more to the Reason story than that. For example, it can auto-detect your control surface and set up control mappings for Reason devices. Unlike some DAWs or Propellerhead's own ReCycle tool, Reason lacks the ability to slice sampled loops. It loads loops only as raw samples or in REX format—which you could bring in after generating them in ReCycle. It also lacks MIDI output, which you might want in order to drive external hardware synths. From here, let's focus on what's new.

Alligator

My favorite new module is the Alligator Triple Filtered Gate. This clever effect is perfect for pulsing rhythmic textures. It has three parallel signal paths—one with a highpass filter, one with a bandpass, and one with a lowpass. (All three filters are resonant.) A built-in step sequencer with 64 patterns opens and closes the gates to these signal paths, but if you prefer, you can open the gates in your own rhythm using a recorded MIDI track or a trio of Matrix Pattern Sequencers. The built-in pattern sequencer has its own gate outputs, so you could trigger some other device, such as a ReDrum, in the same pattern as Alligator.

Each of the three signals is fed through an overdrive circuit, a phaser, and a stereo delay line, after which you can set its panning and volume. An LFO can modulate each filter cutoff, and there are also attack-decay-release envelopes for

Bottom Line

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Balance of Power

Propellerhead ventures into making hardware with Balance, which records and plays back 24-bit audio at up to 96kHz. It's a two-in, two-out interface, but it has some extra jacks on the back, so you can leave your guitar, bass, a couple of keyboards, and a couple of mics patched in while laying down tracks.

The front panel sports two big knobs: one for the main output level and the other for headphones. The left and right inputs have independent trim knobs, each with a tiny LED that glows green for signal and red for clipping. For each input, you can choose mic, guitar, line 1, or line 2 using handy front-panel buttons. The mic inputs are XLR with switchable 48V phantom power, and the guitar inputs have pad buttons.

If you're using Reason or the entry-level Reason Essentials, you can hit the Meter/Tuner button on Balance and bring up a great big multi-segment input level meter. As a bonus, this utility includes a tuner display, so you can check your guitar's tuning before laying down a track. Another bonus is the Clip Safe button. With mono recording (though not stereo), Reason and Essentials record the input at both your selected input level and a lower level. If the input clips, you can use the lower-level signal for just the affected portion of the track. This is a brilliant innovation that's sure to save many a musically perfect take that would otherwise have to be trashed.

A front-panel mute button shuts off the main line outputs while leaving the headphone output on. If you hold this button for a second instead of tapping it, it activates zero-latency direct monitoring of the currently selected input. This is handy both for recording and for standalone use when your computer isn't on.

Reason Essentials ($299 list/$249 street) is bundled with Balance to sweeten the deal. Essentials is a fully functional multitrack audio recording platform with some, but not all, of the Reason devices. A full comparison chart is on Propellerhead's website. Basically, with Essentials you don't get the Kong, Thor, or Malström instruments, nor the new effects, the Neptune pitch shifter, or the Vocoder. You do get the excellent RV7000 reverb, Scream distortion, and the Line 6 amp models.

Your license for Essentials or Reason can be installed on Balance, so you won't need to occupy another USB port with a dongle. Balance has no MIDI I/O jacks—but Reason doesn't transmit MIDI to the external world anyway. Assuming your keyboard uses USB for MIDI, you won't need actual five-pin MIDI jacks.

the filter and amplitude. All three signals share the ADR, LFO, and delay settings, but each signal has its own amount knob. Finally, a ducker lets you duck the dry signal momentarily by inverting the ADR amplitude envelope.

Pulveriser

I've always liked Reason's Scream distortion module, which can mangle the tone in ear-catching ways. Pulveriser lacks Scream's choice of distortion types, but adds some welcome new features. For anything from adding a taste of warmth and presence to bone-grinding mayhem, Pulveriser will do the deal. Distortion amount and type are covered by the Dirt and Tone knobs. Pulveriser also has a compressor for the input, a wet/dry output knob (wet/dry is not found on Scream), a multimode resonant filter, and a couple of built-in modulation sources—an LFO and an envelope follower. The latter two can modulate filter cutoff, the follower can also modulate LFO frequency, and the LFO can modulate output volume for tremolo. The LFO has a Spread button, which produces rich stereo tremolo and filter effects.

Half a dozen "CV" inputs and a couple of audio signal modulation inputs are on the back panel. Using the latter, you can coax Pulveriser into doing amazingly grungy AM/FM tones. Another cool option is to patch the envelope follower's CV output into the Dirt CV input, thereby controlling the amount of distortion with the level of the input signal.

The Echo

Setting up a stereo echo with Reason's original DDL-1 delay line has always required a bit of patching, because DDL-1 is monophonic. To

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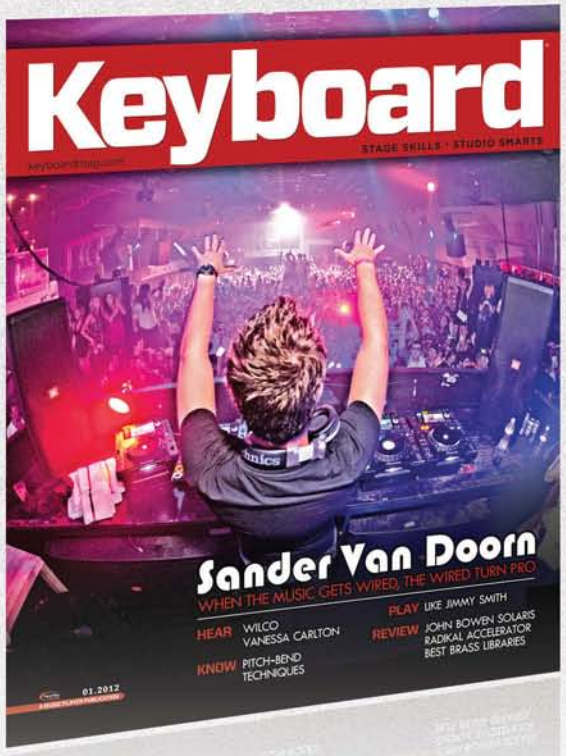

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filter the echoes—even more patching. These problems are solved by The Echo, which does stereo delays with a bandpass filter in the feedback path . . . and a lot more, of course.

In the Color section. you can crank up the Drive knob and choose a limiter, overdrive, distortion, or a tube effect. Modulation sources for the delay time include an envelope follower, an LFO, and a Wobble knob, which adds a touch of random pitch instability such as you might get from a vintage tape delay whose capstan was slipping.

A Ducking knob can drop the wet output while there's an input and let it pop back up when the wet input stops, perfect for when you want to hear a normal vocal track and then suddenly hear wild echoes at the end of the vocal phrase. A diffusor can be used to soften the echoes. When the feedback amount is cranked up past 100 percent, Echo will go into runaway feedback but without overloading the output audio bus—extremely cool. The rear panel offers in and out patch points for the feedback loop, so you can patch in whatever other effects you'd like. Oh, and did I mention the trigger and roll modes? The only odd thing about Echo is that the LFO can't be synced to the transport.

In Use

I'm going to need some short music cues for an interactive text adventure game I'm working on, and after upgrading to Reason 6, I quickly realized I wanted to use it for the game's soundtrack. I did the first cue in a couple of hours one evening. A Malström preset gave me an exotic animated pad tone for the intro, and a Combinator preset with a choice of eight bass tones provided a fat wobble bass. I picked some drum sounds in Kong and processed a couple of them through Kong's built-in effects. A second Malström gave me a dirty electric piano to fill in a hole. A dub delay preset from Echo added color to the fade-out.

I plan to do six or eight more cues for my game using Reason exclusively. Check the *Keyboard* website for more details and audio clips.

Category Blur

As cool as the newly integrated audio features in Reason are, they raise a philosophical issue. For years, Propellerhead has been insisting that Reason is *not* a DAW (digital audio workstation) and therefore that it shouldn't be compared head-to-head with Pro Tools, Sonar, Cubase, or FL Studio because it's a different type of product. But with the addition of audio tracks, you have to squint to see the distinction. To an outside observer, Reason is starting to look a great deal like a DAW. It has, in my opinion, a better suite of included instruments and effects than any DAW on the planet, and signals can be patched from one module to another with greater versatility, ease, and confidence than if a comparable set of plug-ins were running in a DAW. But the other differences are not as enticing: Reason won't host third-party plug-ins (though you can route its audio output into another DAW via ReWire), it won't send MIDI to external instruments, and it won't save or load audio files in compressed formats such as Ogg or MP3.

Making music in Reason's seamlessly integrated work environment is more than pleasant—it can be inspiring. But if you have some favorite plug-ins, as I do, you'll find using them in conjunction with Reason is not seamless or pleasant. When you use plug-ins in a DAW, their state is saved with the song. But if you use ReWire to connect Reason to your DAW in order to use your plug-ins in conjunction with Reason tracks, your workflow will be a lot less natural than if you're using just the DAW by itself. In principle, there's no reason why Propellerhead couldn't create a "Third-Party Plug-In Host" module; they just haven't yet done so.

Alligator, Pulveriser, and the Echo are all new in Reason 6. Not only do they sound terrific, they look terrific as well.

Conclusions

When I haven't used Reason for a while, I start to forget how very much I like it. The synths and presets are great, and the beautiful user interface practically begs you to go further by adding your own creative sound design. Using the Dr. OctoRex and Kong modules, it's practically impossible *not* to lay down compelling beats. The sequencer makes it easy to record alternate takes, rearrange the song sections, and add layers of automation. The main mixer (formerly found in Record) adds a level of complexity to patching, but once you get familiar with it, you'll wonder how you ever got along without it.

The three new modules may seem at first to be no more than minor additions, but they're packed with features, and each of them opens up some unexpected sonic possibilities. I can't help feeling Propellerhead is missing out by not making Reason host third-party VST plug-ins, but while that's a limitation, it's not a deal-breaker. Once you get your hands on Reason, you'll never look back—except when you hit the Tab key to look at the back panel, of course! ♫

SOUNDCLOUD

Audio examples from a soundtrack the author is composing using Reason.

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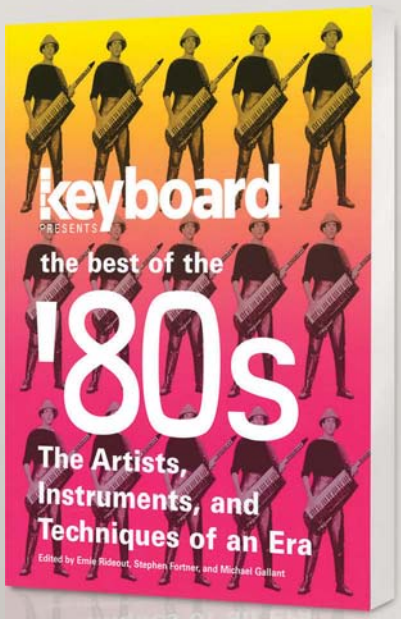
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No single decade revitalized the keyboard as a focal point as much as the 1980s. Here, the editors of *Keyboard* magazine have culled that era's best articles and combined them with a wealth of insight in one landmark book. Features 20 interviews with noted players, producers, and pioneers like Jimmy Jam & Terry Lewis, Duran Duran's Nick Rhodes, Depeche Mode's Vince Clarke, Peter Gabriel, The Human League, Herbie Hancock, Chick Corea, and Frank Zappa.

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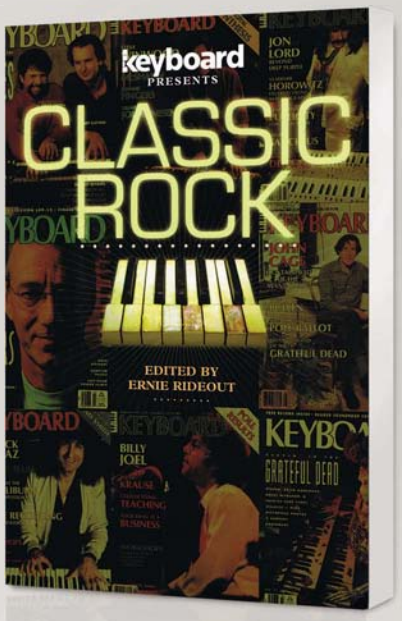

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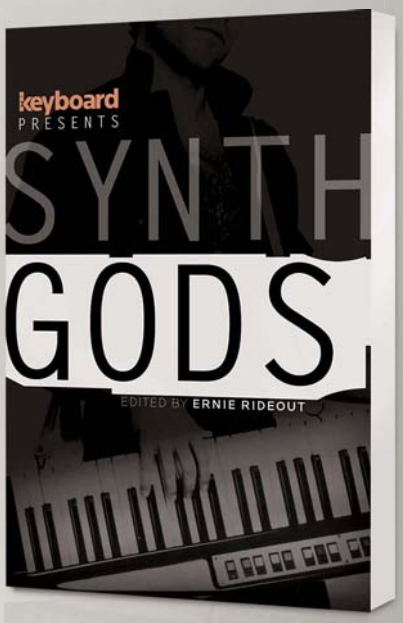

SYNTH GODS

Culled from the pages of *Keyboard* magazine, this book spotlights artists who did much more than just play synthesizers: they changed the course of music history and inspired generations. Featuring in-depth profiles of Jan Hammer, Wendy Carlos, Rick Wakeman, Brian Eno, and others, this book delves into how these new, untested boxes of circuitry captured the imagination of so many legendary artists.

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KEITH MCMILLEN INSTRUMENTS
12 Step

BY KEV CHOICE AND ALBERT MATHIAS

OVER THE LAST 30 YEARS, KEITH MCMILLEN'S INNOVATIVE SPIRIT HAS TAKEN him to Harman Kardon and Gibson, a partnership with the University of California at Berkeley's Center for New Media and Audio Technologies, and an early role in the precursor to the Open Sound Control music programming language. He's probably best known, however, for founding Zeta—the company that, among other things, put electric and MIDI-fied string instruments on the map in the 1980s. At heart, McMillen is a maverick with traditional roots—he's formally trained in acoustics, classical guitar, and composition—but his mission is to push live, interactive music ensemble situations using extended instruments enhanced by computer intelligence.

Snap Judgment

PROS Monster-proof build. Deeply programmable. Polyphonic aftertouch. Ridiculously portable.

CONS Nailing the "keys" accurately may take some practice.

It's no surprise, then, that when McMillen started his eponymous company in 2007, his first product was the K-Bow, a Bluetooth-enabled sensor bow, followed by the Batt-O-Meter battery tester, the StringPort computer platform for guitars, and the ten-button SoftStep MIDI/USB foot controller. Now comes the 12 Step, which adds two footswitches to the SoftStep layout and resembles a one-octave keyboard.

Keys and Controls

First, the basics: The 12 Step is a chromatic keyboard foot controller that sends MIDI notes via USB or the optional MIDI Expander to control soft synths, MIDI keyboards, and MIDI sound modules. The 12 Step is polyphonic, it has aftertouch and pitch-bend, and it's velocity sensitive.

The first thing you may notice is its form factor: It weighs one pound, and it's barely a foot and a half long, four inches tall, and a quarter of an inch thick; the "keys" are about an inch and a quarter by half an inch. That doesn't mean that it's invisible onstage, however. Thanks to its clean, clear layout and its white LED backlighting, the 12 Step's keys are easy to see, and the four-character, user-programmable, alphanumeric display, and 13 red LEDs help keep those footsteps in the dark right on track.

The manual, which lists the presets, is well written and clear, as is the editor you can download at keithmcmillen.com. Not everyone will find the editor easy to navigate, but spending time and exploring possibilities opens up a realm of new possibilities—most important, the abilities to arrange and edit the presets to your specs, and to adjust the keys' velocity sensitivity, which can make a huge difference to your experience of these pedals.

Changing presets is as easy as going into Select mode by holding down the Select key until the red LEDs flash, and then pushing any of the numbered keys. To change "decades," go into Select mode, press the Enter key, and use the -10 or the +10 keys. Other standout features of the 12 Step include its note modes (Normal, Legato, Toggle, and Hold), its easy iPad connectivity, and its sophisticated pressure and tilt performance modifiers—yes, you can tilt your foot forward on a key to pitch-bend.

In Action

The 12 Step comes with 60 presets, and the editor software makes it easy to concoct and save another 68. Right out of the box, with the MIDI Expander (a separate peripheral that lets you control MIDI gear without a computer—you don't need it to control soft synths over USB) attached, the 12 Step coaxed interesting flavors from our Roland HP-126 digital piano. Scrolling through settings is a good way to sample polyphonic presets (you can play up to five notes per key) and get a feel for how much pressure the pedals need. As responsive as they are, their diminutive size may take some getting used to; trying to play walking bass lines, for example, might make one wish for shoes with bigger heels or pointier tips. Sitting down certainly helps. Those with big feet or boots will be happy to know that in a gig situation, switching from "multi-key" to "single key" mode could help prevent accidental triggers.

The 12 Step really came alive with Propellerhead Reason and Ableton Live. Hooking it up via USB is a snap—it's class-compliant and doesn't require a driver, so selecting it as a MIDI device in your host program's Preferences menu is all it takes. Scrolling through the presets for major and minor chords, tritones, thirds, suspended ninth chords, and so on inspired plenty of fresh ideas.

Bottom Line

If you're looking for a MIDI/USB foot controller that's supremely portable, visible, flexible, and reliable, your search is over.

$259
keithmcmillen.com

Jamming on a 12-bar blues in Reason while using the "major ♭7" preset, for example, lead to inspired soloing over chords, moving up and down chromatically while improvising on a Yamaha Motif. It's easy to imagine the 12 Step coming in handy for effects and pedal tones, as well as for vamp sections for solos or outros; with some creative thinking, a solo pianist might find a way to wring unusual accompaniments from the 12 Step. Anything involving fancy footwork, however, will require some practice, especially if you won't be looking at your feet.

It's almost a shame to hide something this cool on the floor underneath your keyboard stand. The 12 Step would make a nifty, eye-catching tool for deejays, emcees, or anyone on stage responsible for triggering samples or generating tones. It was an interesting experiment, for example, to trigger sustained musical events with the 12 Step while playing a Zendrum—single notes, intervals, and chords sounded great, but being able to control arpeggiated sequences built out of Native Instruments Kore patches, hosted in Ableton Live 8, *while* having both hands free to play drums was simple, liberating, and inspiring—just what you'd want from a non-traditional MIDI controller.

Conclusions

With its cutting-edge form factor and insane flexibility, the 12 Step is a welcome alternative to heavy, cumbersome foot controllers that require vigorous tap dancing and a Ph.D. to program. Hitting the keys consistently may take practice, but once you've developed your aim, the possibilities are limited only by your imagination. ♫

VIENNA SYMPHONIC LIBRARY
Vienna Ensemble Pro 5

BY JOHN KROGH

IT WAS ONLY A FEW YEARS AGO WHEN COMPUTERS BECAME POWERFUL enough to run a slew of soft synths and effects at the same time as lots of audio tracks. Even with the most powerful machines, though, musicians and composers could quickly reach the limits of their systems—especially if many sample-based instruments were involved—and some still do. For many, the solution was to dedicate one or more computers as "virtual racks" (instrument hosts) that fed audio to the main DAW computer over a multichannel connection such as ADAT lightpipe. This approach was (and is) popular among power users. Unfortunately, configuring such a setup requires multiple MIDI and audio interfaces, which adds cost and complexity.

Snap Judgment

PROS Powerful mixing features. Supports 32- and 64-bit software. Includes three licenses (more can be purchased). Runs on older PowerPC-based Macs. One purchase includes three licenses for installing on multiple computers.

CONS Requires e-Licenser dongle ($29) for each machine. Configuring parameter automation is still somewhat fiddly.

Overview

Fast forward to Vienna Ensemble Pro. Now at version 5, VEP provides an elegant solution for multiple computers. You can also run VEP on the same machine as your DAW, but I'm getting ahead of myself. The big deal is that VEP lets you interconnect your DAW and instrument-dedicated computers via Ethernet, with audio and MIDI data shuttled over inexpensive Cat-5 cables. While that might not seem revolutionary for the weekend warrior, it's huge for musicians who use lots of RAM- and CPU-intensive instruments.

VEP is made up of three pieces of software: server, plug-in, and host. The host can run standalone or in tandem with a DAW, and it's from VEP's host that instruments and effects can be loaded and configured for multitimbral use.

To use VEP with a DAW, first launch the server. Then, from within the DAW, load an instance of the plug-in, which accesses the server. Multiple instances of the host can be loaded into the server, so you can create separate instances for each section of the orchestra, with strings in one, percussion in another, and so on. I was pleasantly surprised to find that VEP is virtually plug-and-play and routing is no more complicated than working in any other sequencer.

Multitimbral instrument templates can include a mix of VSL's own instruments and third-party soft synths (as illustrated in the screen shot), and here VEP offers some thoughtful features such as mixer channel color-coding and the ability to merge sounds from different instrument templates into a new template.

The server is available in 32- and 64-bit versions, intended for use with 32- and 64-bit plug-ins. That means it's possible to use 64-bit plug-ins alongside 32-bit DAWs such as Pro Tools. That's significant because 32-bit software is capable of addressing a maximum of only 4GB of RAM, and with sample-based instruments loaded into a 32-bit DAW (as opposed to VEP), a

computer can quickly run out of RAM. Of course, you can also use legacy 32-bit plug-ins with newer 64-bit DAWs.

New Features

Version 5 adds several big-ticket features, chief of which is the ability to automate VEP's plug-in parameters from your DAW. Configuring parameter automation is mostly straightforward: Choose an arbitrary parameter number from within VEP (unfortunately there's no way to name the parameters), then choose the destination (either manually or by using VEP's learn function), and you're good to go. Logic users have to go through a few extra steps and are required to use VEP's Event Input plug-in to handle automation, otherwise audio glitches may occur when rendering instrument tracks as audio. That aside, I'm happy to finally be able to tweak synth settings using my DAW's automation.

VEP now features an Audio Input plug-in, which lets you bus audio out from your DAW to an input bus in VEP's host software so you can use it as a virtual effects rack. It's an interesting concept, but there isn't much benefit in this old school workflow unless you absolutely have to use a certain plug-in that's not supported by your DAW. That said, a lot of Pro Tools users have been enthusiastic about this feature in various online forums, so it could be a much bigger deal for legacy PT users who are frustrated by the aging RTAS format. (VEP supports the VST and AudioUnit formats.)

Bottom Line

The best instrument hosting solution for squeezing every bit of performance out of multi-computer composing setups.

$280 list | approx. **$260** street

vsl.co.at | ilio.com

Pro Performance

I've been using VEP since it was freeware that could handle only MIDI over Ethernet. Since then, it has evolved into a truly professional solution to an important niche-market problem. At the risk of sounding like a gushing shill, here's a short list of what I love about VEP. The Preserve feature will keep everything loaded into the servers and hosts while you close and open different sessions—no more waiting for sounds to load when switching between cues or related projects. The plug-in remembers everything about the server and host configurations, and that gets saved along with your DAW session, so you never have to worry about saving separate multitimbral presets.

Plug-in user interfaces can be detached from VEP, so you can tweak them in real time just as if you'd opened the instrument in your DAW. It's now possible to start and stop your DAW transport when VEP is currently selected—no more jockeying back and forth between the two programs to make changes and hear the results. Recognizing computers on a network, streaming audio, sync . . . it all simply works.

Conclusions

Vienna Ensemble Pro may not appeal to hobbyists or keyboard players whose studio projects stick to pop and rock instrumentation, but for composers who frequently run demanding sessions, VEP is an absolute godsend. While computer technology may advance to the point where we'll never need more than a single machine, we're not there yet. There's a need for this kind of product, and since VEP is the best in its class, it wins our Key Buy award. ♫

Vienna Ensemble Pro and Vienna Instruments tutorial videos.

keyboardmag.com/april2012

KORG
Monotron Delay and Monotron Duo

BY GINO ROBAIR

IT'S BEEN A YEAR AND A HALF SINCE WE REVIEWED THE ORIGINAL Monotron, and I still marvel at the fact that Korg—makers of highly sophisticated instruments—created an inexpensive, toy-size analog synth that streets for $60. Did they *realize* how hackable it was when they designed it? Did they predict fans of the legendary MS-series lowpass filter would buy a handful to experiment with, or that some clever chap would put the synth's guts behind a Euro-rack panel? The pocket-size synth may be the catalyst that reintroduces the i-generation to fat hardware sounds and the joys of circuit bending.

Keyboard K KEYBUY AWARD

Snap Judgment

PROS Inexpensive. Classic synth and filter sounds. External audio input. Ultra-portable. Easy to circuit-bend.

CONS Noisy output on Monotron Delay.

Thankfully, Korg didn't make the mistake of replacing the original model with a "Mk. II" that has more bells and whistles. Instead, they added two more instruments that complement the original: the Monotron Delay and Monotron Duo. Packaged in blister packs and accompanied by a one-page manual covering all three synths, the new Monotrons have the same form factor as the original—a three-position switch, five knobs, a ribbon keyboard, a built-in speaker, an audio input, and a headphone jack—and are powered by a pair of included AAA batteries. From there, the new models are as sonically different as they are physically similar.

Monotron Delay

More an effect than a synthesizer, the Delay adds a simulated tape-style echo effect at the end of the oscillator/LFO/lowpass filter configuration. With controls for Time and Feedback, it can easily go into grainy self-modulation, complete with the pitch changes you'd expect as you adjust the Time control—instant '50s sci-fi and King Tubby dub effects.

If that were all the Delay had up its sleeve, I'd still drop $50 for it. But it also includes a synth voice, though with only five knobs (and two of them dedicated to the delay), some compromises were made. The main oscillator offers a sawtooth wave and goes from subsonic to about 4kHz.

The LFO modulates the oscillator and has selectable triangle and square waveforms. A recessed trim control on the rear panel changes the duty cycle/shape of the selected LFO waveform. The Rate knob controls the pitch of the LFO—from one cycle every 50 seconds to the audio range. The "Int" knob controls both the pitch of the main oscillator and the modulation depth, but inversely: Turning "Int" clockwise increases the LFO speed while lowering the overall pitch range of the keyboard. The remaining control is for filter cutoff. Although the synth might at first seem like the least interesting part of the Monotron Delay, it's capable of creating sounds that other Monotrons can't, specifically beepy, modular synth-like tones, which go very well with the old-school echo. The feedback buildup of the echo effect has an organic quality that's hard to resist.

The Delay is also the noisiest of the Monotrons. It's seriously low-fi, particularly through the internal speaker, but that's perfect for adding grit.

Two oscillators in the all-analog Monotron Duo (left) mean you can fatten up the sound or create surprisingly complex timbres. Also real analog, the Monotron Delay (right) has a gritty delay effect instead of the second oscillator. Both use Korg's classic MS series filter.

Monotron Duo

What's special about the Duo is that it offers two square wave oscillators, though that doesn't mean it's duophonic. VCO2 can be used to create an interval you can play up and down the keyboard in parallel to VCO1, to fatten up the overall sound, or as a modulator.

VCO1's pitch ranges from *D1* to just shy of *A6* (two octaves above middle *C*). VCO2 has a wider pitch range, going from LFO territory up to the edge of audibility, making it perfect for modulation. In VCO1-only mode, VCO2 is used to frequency modulate oscillator 1 using oscillator 2's Pitch and Intensity controls. In VCO1+2 mode, you can set VCO2's pitch to whatever interval you want. Then, as you turn VCO1's Pitch knob, the interval between the two oscillators remains constant.

The filter on the Duo, unlike the one on the Delay, has a peak control and a cutoff frequency knob. Consequently, the filter can be driven into resonance, giving your patches extra bite. The Duo also has a Scale button that makes it easier to play melodic parts on the tiny ribbon keyboard—you get chromatic, major, and natural minor scales, plus a continuous pitch mode.

Pocket Prog

Although the internal speaker enhances the portability of these instruments, both synths are capable of creating sounds that rattle their plastic housing. To fully experience their potential, plug the Duo and Delay into external speakers. You'll need 3.5mm TRS cables as two-conductor TS cables won't give you a stable connection.

One of the best features is the audio input, which lets you run any monaural signal through the lowpass filter, and with the Delay, the effect as well. The filter sounds particularly interesting on percussion, whether it's from an iOS drum machine, an MP3 file, or some other source. If you have more than one Monotron, interconnect them! I own a pair of the original model, so I chained the four units together with the Monotron Delay at the end—I felt like a miniature Rick Wakeman positioned next to my tiny Stonehenge. With three Monotrons ahead of it, the Delay's noise floor increased substantially, so I dialed back its filter cutoff to mitigate some of the hash. That gave the overall sound a vintage vibe.

Conclusion

It's hard not to like the Monotron Delay and Duo. They're fun to play, they sound great when plugged into speakers or a DAW, and they even provide an inexpensive way to introduce kids to the joys of analog synthesis. With its scale settings and second VCO, the Duo appeals to musicians interested in the melodic capabilities of these synths. The additional oscillator and filter resonance enrich the timbral palette. Fans of vintage and lo-fi effects will get more out of the Delay. Besides the fun that it offers as an echo, I enjoyed the sounds it makes on its own. At this price, though, why not get both? ♫

Bottom Line

Unless you're a pianist who avoids any instrument that uses electricity, we can't think of any reason not to own every flavor of Monotron.

$70 list each | **$50** street each
korg.com

SOUNDCLOUD

Original audio examples and video clips of daisy-chained Monotrons.
keyboardmag.com/april2012

MACKIE
MR8 Mk. 2

BY FRANCIS PRÈVE

IN THE PAST FIVE YEARS, I'VE SWITCHED MONITORS THREE TIMES. This is partly because I'm trying to find something that compliments my studio acoustics, but more importantly, my ears. A lot of producers get stuck in the "expensive equals better" trap. If that were true, Yamaha's legendary NS-10 (which gained mythical status for its everyman qualities, not any audiophile specs) would never have become the gold standard for close to two decades. So when Mackie's MR8 Mk. 2 monitors arrived, I was curious as to how I'd react to them, especially given their low price.

The MR8 Mk. 2s are two-way, bi-amped, active monitors with 8" woofers and a ported design that makes the most of their bass response. The 1" tweeter relies on an internal waveguide that helps widen the sweet spot and in practice, that's on point. These monitors have a decent width in my *very* near-field studio.

Inputs are balanced XLR and 1/4" TRS plus unbalanced RCA. Two switches on the back modify high and low frequencies to compensate for room location (*e.g.*, reducing the bass boost if you put the speakers in a bass-enhancing corner). The recessed trim pot has a center detent, useful for making sure gain is identical on the pair.

I make dance music but I listen to everything, so I ran lots of different material through the MR8s: Foo Fighters, Brian Eno, some '80s new wave, and several mixes I'm working on. The first thing I noticed was that the highs are a little crisp. Not shrill, but crisp, and very different from the shimmery highs of my usual monitors, which are three times as expensive. The upper mids are also pronounced, but again, not unpleasantly so. In fact, this made me a lot more conscientious about the 2–6kHz area of my mixes.

The lows were big and solid and *way* more present than those on my usual pair, which bothered me. Not because there was something wrong with the MR8s—far from it. I was annoyed because I could finally hear and fix some problems in the low end of a remix I'm currently doing. When it comes to low end, these babies have *oomph*.

I was really surprised at how much I enjoyed these monitors. They wouldn't be my first choice for delicate, detailed recordings of jazz or acoustic music. But for pop, rock, hip-hop, or dance music with lots of bass, they're now among my top recommendations for producers looking for solid quality and Key Buy-winning value. ♫

Snap Judgment

PROS Killer low end. Great entry-level monitors for pop, rock and dance. High- and low-frequency trim switches. Flexible analog connections.

CONS Upper mids and highs may be a trifle crisp for some ears.

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MachFive 3 is out and awards are coming in, along with words like *astounding*, *unbeatable*, *tremendous* and *unparalleled*. Keyboard Magazine just gave MachFive 3 their Key Buy award, saying that "...no other sampler better integrates synthesizer functions." Could MachFive 3 be the new go-to sampler for Pro Tools users? The editors of the AIR Users Blog, a leading independent Pro Tools user community, gave MachFive 3 their Editors Choice Award, saying that "MachFive 3 is by far the easiest way to get the biggest sound."

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Whitney always treated me with the utmost respect as a musician and as a human being, and that's rare in pop music today. The world has lost a true icon, and I'm proud to have worked with her!

Sam Sims, bassist

I had the honor of going on my first major world tour with Whitney Houston in 2010. That year set the template for me of how an artist can instill a sense of community and family on the road. I have so many fond memories of her hanging out with the band, playing cards in the lobby, and on organized outings. The Whitney I remember was at once a superstar, a mother, a daughter, one of the "guys," and a matriarch that watched over all of us. She will be greatly missed.

Taku Hirano, percussionist

Whitney Houston is one of the greatest voices the world has ever known. Her effortless command of her gift could move souls in whatever way she wanted. She was the only artist I've ever worked with that moved me to tears onstage while accompanying her. Hers is a voice that will never be duplicated, because the spirit behind the instrument is no longer. Nippy [Whitney's nickname] and I became quite close as I worked with her during some of her biggest triumphs. She was like a big sister to me. Now, as with Michael Jackson, I will embrace the time we had and the music we shared. The memories are many and her legacy is undeniable. I lost a friend and the world lost a goddess, but the universe has gained everlasting love just because Whitney Houston lived! I love you, Nip, and say hello to M.J. for me. We will continue to uplift and shine light on your name. Be blessed and thank you.

Michael Bearden, keyboardist

I had the honor of knowing Whitney since she was a teen in the early '80s. I was playing and music directing for her mom, the great Cissy Houston, and Whitney and her brother Gary sang backups. I remember the night we played Mikell's, the iconic New York R&B club at the time. Cissy made up some excuse about having allergies and no voice, and sent Whitney in. With Cissy, the show *always* had to go on. With no rehearsal, this young girl became the great Whitney Houston that night. She blew the roof off the joint. People got to witness something so powerful—something they had never heard in their lives, and probably never will again. Cissy knew *exactly* what she was doing that night! I was so proud to be part of that. Later, I toured with Whitney for over 11 years. She had the voice of an angel. She could do things that many have tried (to no avail) to emulate. It was vocal, but with Whitney, it was spiritual. The mellifluous tones that came out of this woman were otherworldly, as if God was truly speaking through her. Unfortunately, God loaned her to us for too short a time. God bless you, Whitney. Rest in peace.

Bette Sussman, keyboardist

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- Hi-Z guitar input with -20 dB pad and Precision Digital Trim.
- Stereo line input (balanced TRS 1/4-inch or stereo mini).
- Stereo balanced TRS 1/4-inch main outs, plus 1/8-inch mini line-level out.
- S/PDIF digital out at rates up to 96 kHz.
- Multi-band EQ, compressor, and test tone/noise generator.
- Instrument tuner and analysis tools, including FFT display and oscilloscope.
- Includes AudioDesk DAW software for Mac OS X and a USB cable.

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